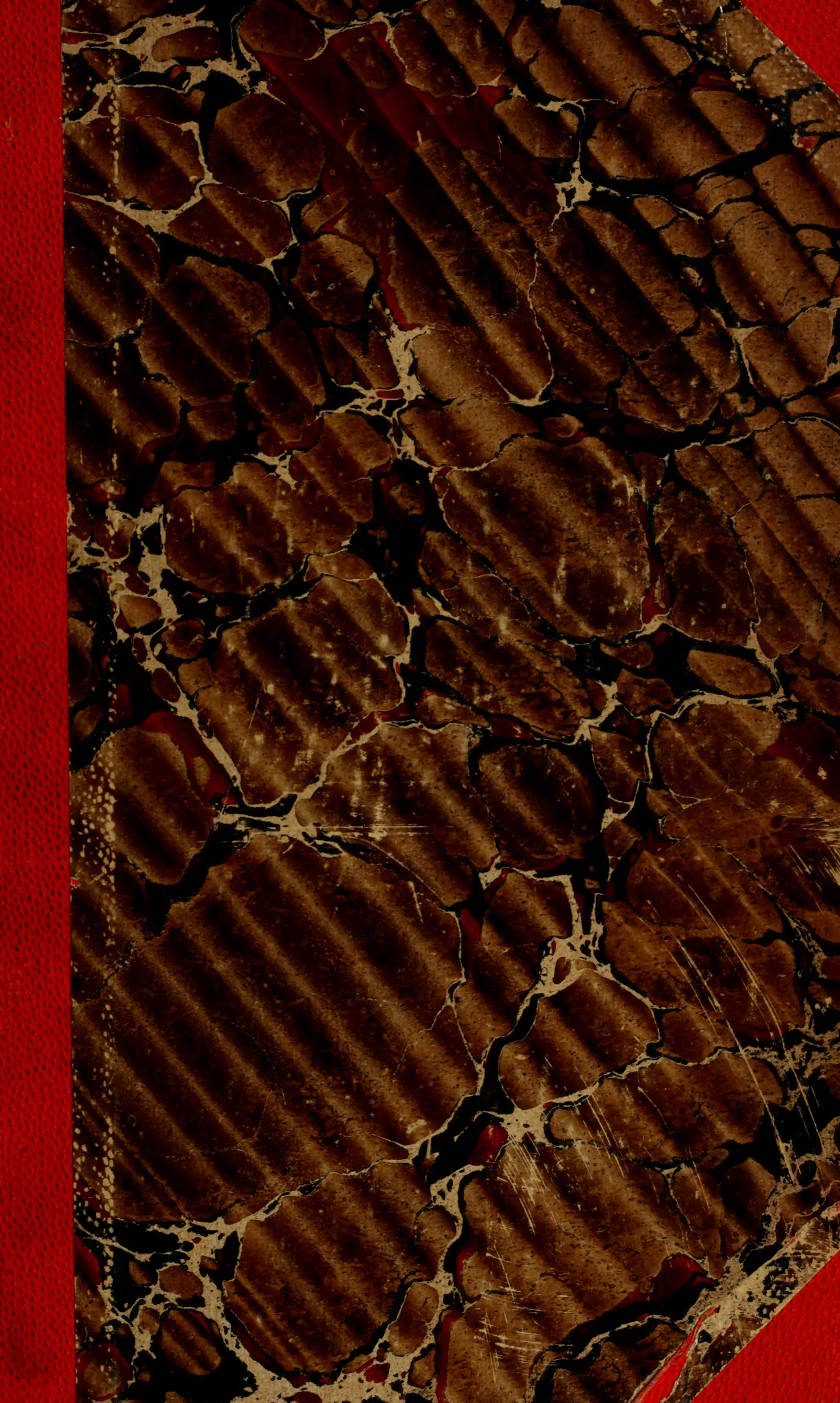

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THE

COLUMBUS REVIEW

OF

MEDICINE AND SURGERY.

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W. L. McMILLEN, M.D.,
EDITOR.

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ERRATA.

Page 8, line 2, insert "and" before "an occasional alkaline."
" 8, " 16, for "vesecation" read "vesication."
" 11, " 17, for "Asclepieadeus" read "Asclepiades."
" 16, " 4, for "and of food" read "and if food."

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THE
COLUMBUS REVIEW.

AUGUST, 1860.

ASSOCIATION

INTRODUCTORY.

In introducing to the medical profession a new Journal of Medicine and Surgery, the objects we propose to keep in view in its management, may be briefly sketched.

In the present day when new books upon medical science appear so rapidly that it is difficult for the most diligent reader to keep up a full acquaintance with the contemporary medical literature, an excellent medium of communication of the truths thus brought to light is to be found in analytical reviews of such productions, as from their importance, deserve consideration. It is therefore our intention to make this department a prominent feature in the Journal. In such articles, impartiality will be strictly observed, and an honest effort made in every case to set forth the distinctive features of the author's labors. We shall never attempt to puff a bad book into fictitious reputation, but shall denounce error and pretension, in whatever specious guise they may be clothed. The recognition of truth and merit, wherever they may be found, will be a far more agreeable duty. We shall strive to keep our readers advised of the sterling books that may issue from American or European authors. We shall not condemn nor undervalue any expression of truth because it is foreign, nor unduly estimate the productions of our own countrymen. Independent in our views, we

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shall endeavor to judge both alike by those canons of criticism which are based upon common sense and the teachings of medical science.

A large proportion of our pages will be devoted to original papers upon subjects of practical importance.

Matter of permanent value will be selected from the standard British journals, and translations of important articles will be faithfully made from German, French, and other periodicals.

A retrospect of the various articles in the American medical journals will regularly appear as soon as our list of exchanges shall be complete. In this way we hope to give our readers a reliable chronicle of the labors of the profession of our country.

We promise that no efforts on our part will be spared to add to the interest of the Journal and the standard of ability in every department. To this end we invite the co-operation of the members of the profession, and solicit original articles upon subjects of scientific and practical interest in medicine and surgery. Those disposed to contribute papers, may feel assured that all articles presented will be judged by their merits, and that none will be rejected from our columns because of honest differences of opinion founded upon scientific medical knowledge. As we hope by these means to make our Journal worthy of support, and to receive some reward for our own labors, we cheerfully recognize the claims to participation of those who, by the productions of their intellect and experience, may add to the value of our pages. We propose, therefore, to remunerate contributors for all articles thus accepted.

What success our efforts may deserve, we feel confident our professional brethren will not be slow to award. We have a firm reliance that they will give us, as we shall labor to deserve, a hearty and generous appreciation of our enterprise.

PART I.—REVIEWS.

TODD ON ACUTE DISEASES.

Clinical Lectures on certain Acute Diseases. By ROBERT BENTLEY TODD, M.D., F.R.S., formerly Physician, now Consulting Physician to King's College Hospital, London. Philadelphia: Blanchard & Lea, 1860. (pp. 308.)

THESE lectures have a somewhat melancholy interest attached to them. They were finished during the week preceding the death of Dr. Todd, and bear the traces of his last earthly labors. The author had made no ordinary mark in the records of his age. He is well known in this country by the "Physiological Anatomy and Physiology of Man," which he wrote in conjunction with Mr. Bowman, and which is unquestionably the best book upon the subjects it comprises in our language. He also wrote a memoir on the Anatomy of the Brain and Spinal Marrow, and several papers on the Nervous System. From 1836 to 1853 he held the chair of Physiology and Morbid Anatomy in King's College, London, and from 1838 was one of the visiting physicians and lecturers on Clinical Medicine in King's College Hospital. His connection with the hospital continued until shortly before his death, which occurred from hæmatemesis, on January 30th, 1860, at the age of 51 years. As the results of his clinical opportunities he gave to the profession three volumes of Clinical Lectures. The first on Apoplexy and other nervous diseases, and the second upon Urinary diseases, were received with great favor by the profession. The third and last of the series is the work before us. The private practice of Dr. Todd during the late years of his life was very extensive. His genial manners, his frank intercourse with all with whom he came in contact, his general culture, his thorough knowledge of medical science, and his great skill in forming a diagnosis, gained the esteem and confidence of his numerous patients and of his fellow-practitioners, to whose aid he was so often called, in consultation. As a clinical lecturer few men more thoroughly embued an audience with his own doctrines or exercised greater influence in forming the opinions of the rising generation of practitioners of medicine.

Such is the man whose work comes to us almost a posthumous product. Its publication will help to make an era in the history of medical practice. It will be one of the mile-stones by which explorers in future generations shall measure the progress attained in this present age. Let us not be misunderstood to imply, that this work is going to revolutionize the treatment of diseases, or to exercise any such prodigious effect in turning men into a different path from what they have hitherto pursued. It simply *records* the progress of a great revolution which has been silently, but not less effectively, going on in the profession, and which has quietly subverted a great many theories and opinions, replaced many points of practice and given to us new truths, and quite probably new sources of error. Let any person past middle age, compare the average practice of the reputable physicians of his acquaintance at the present time with the practice which prevailed in his youth among men of the same relative position in the profession, and seriously note how great a revolution has taken place. No matter what the pathological theories believed by his friends, we speak with reference to the *facts* of their daily practice. Do they bleed as much as they did in disease, even in what are termed inflammatory diseases? Do they purge as copiously as they were wont? Do they render their patients miserable by as many emetics as formerly? Do they induce ptyalism, or even an alterative effect by mercurials upon the gums, as often as they once did? Various explanations will be urged in reply, but we are not seeking these, but simply an answer as to the *facts*. We think it cannot fail to be in the negative. There will be but little difficulty in arriving at this conclusion, for the state of matters is apparent to any who will use their eyes. But when we come to investigate how this revolution has been brought about, or even the precise time of its beginning and the history of its progress, we shall experience more difficulty in our researches. For, as a great thinker has written, "though our clock strikes when there is a change from hour to hour, no hammer in the horologe of time peals through the universe to proclaim that there is a change from era to era. The true beginning is oftenest unnoticed and unnoticeable." The late Marshall Hall contributed largely to the movement which has resulted in the present practice, by his book on the loss of blood, in 1825, and even before that period, by his accurate diagnosis and efficient example in the treatment of disease which came within his sphere. Dr. Reid, in his work on "Nervous Diseases," asserts somewhat strongly, "Less slaughter I am convinced has been effected by the sword than by the lancet, that minute instrument of mighty instruments." That discriminating physician, Dr. Gooch, pointed out the evil consequences of the blind adherence to depressing remedies in certain forms of puerperal mania. In various ways, the careful observers of disease have contributed to the same end, and, narrowing the limits of depletion, have robbed it of its terrors and assisted to place the science of medicine upon the more sure foundations of pathological and physiological science as they have been developed in modern days.

The greatest effects of the revolution we have alluded to, will be witnessed in the present treatment of acute diseases in general, a fact the more strange because in very many instances, perhaps in a majority, the change has only extended to the practice and not to the theories which controlled the previous modes of treatment. Various explanations are usually offered to show that the circumstances of the case are exceptional, as a reason of the deviation from the old paths. There are others who assume the same premises as were formerly held, but arrive at quite opposite conclusions from the older writers. As examples, let us take one of the oldest writers and the author of the book before us. The celebrated Galen described delirium as depending upon humors in the blood, for which the appropriate remedy was the letting out of the bad blood. Those of his contemporaries who hesitated at bleeding were disposed of by his usual low vituperation, and were ridiculed as "blood funkers." Dr. Todd, in his Lumleian Lectures in 1850, maintained that delirium and coma often arose from a blood poison, and were of humoral origin, and consequently he resorted, in their treatment, to increased supplies of nutriment and stimulants to repair the lost vigor of the system. The old and the new unite in their premises, but arrive at the opposite conclusions. Let us trust the moderns will not follow the example of the older pathologist, by supplying any deficiency of argument, by choice vituperative epithets.

The "acute diseases" included in Dr. Todd's lectures are rheumatic fever, continued fever, erysipelas, pyæmia, pneumonia, and acute internal inflammations in general, to which is added a case of poisoning by alcohol. The various remarks upon the diseases are illustrated by the details of 94 cases. As we shall not have room to quote any case at large, we may dismiss them at once with the remark, that they are models of what histories of individual cases should be, graphic narratives of the progress of the special disease whose attentive perusal and study will repay the reader.

After detailing the symptoms and natural history of rheumatic fever (which our limited space forbids any notice), he mentions the different modes recommended in its treatment. 1st. By copious or even repeated venesections as advocated by Bouillaud. 2d. By moderate bleeding and diaphoretics. 3d. By mercury, calomel and opium usually. 4th. By colchicum and guaiacum. 5th. By opium as recommended by Dr. Corrigan of Dublin. We now quote his words:

> "6. A sixth plan of treatment, proposed long ago by Dr. Haygarth, consists in giving bark in large doses, for which, more recently, the less bulky sulphate of quinia has been substituted. Now just imagine the state in which the pathology of a disease must be, when measures so completely at the opposite extremes of our therapeutical resources are advocated for it—as venesection, to the amount of two or three pints, on the one hand, and large doses of quinine on the other; some would even give as much as five or ten grains two or three times a day. Now I have tried both methods of treatment, and I approve of neither; but if I were tied down to one or the other of them, I should not hesitate to choose that by bark. In cases where the sweating is colliquative and the urine copious and pale, with abundant precipitates of *pale* lithates, I have seen great good done rapidly by the use of quinine; but I am not prepared to advise you to adopt this treatment from the beginning, because it tends to check secretion, and so may favor the development of internal inflammations.
>
> "7. The seventh and last mode of treatment that I shall mention to you is, that which you have seen me adopt frequently at this hospital, namely, the *treatment by elimination.* I give it this name in order that you may keep well in view its main object, to promote the elimination of morbid matter by the various emunctories, and also that you may bear in mind the view of the pathology of the disease upon which it is founded.
>
> "It is probable that the *materies morbi* in rheumatic fever is lactic acid, or some analogous agent. We know that the natural emunctory of this is the skin. Many chemists maintain that it will also escape by the kidneys; and if it ever does so, perhaps this is more likely during rheumatic fever than at any other time. Again, since vitiated digestion is apt to produce it, in undue quantity, and it therefore is formed abundantly in the stomach, there is every reason to think a certain proportion of it may be carried off through the alimentary canal. The indications are, then, to promote the action of the skin, the kidneys and the bowels; to use antacid remedies; and to give large quantities of fluid for the free dilution of the materies morbi, and to supply the waste caused by the drainage from diaphoresis and diuresis." (pp. 44–5.)

He therefore gives nitre, with ipecacuanha and opium—the alkalies, especially the bicarbonate of potassa, in half drachm doses every three or four hours—or acetate of potassa in similar doses. An occasional alkaline purgative, as a mixture of the carbonate and sulphate of magnesia. The local treatment consists in wrapping the joints affected in *cotton-wool,* over which is placed oiled silk. In a few cases the pain is aggravated by the heat this generates, or by the profuse sweating, but this will rarely occur. He adds that occasional small blisters applied near the affected joints are very useful. During this treatment the patients are to be supported by simple diluents in liberal supplies, and by a fair amount of nourishment, frequently given in small quantities. Beef tea is preferred. Where there is a tendency to delirium, give stimulants, as brandy or wine. Should the heart become involved, he thinks bleeding inadmissible, but trusts to free vesecation, by which the coloring matter of the blood is spared, and that part of the blood "which is the great agent of the development of new formations" is taken away.

We apprehend that our readers who may have rheumatic fever to contend with will find this eliminative treatment an exceedingly useful and pleasant one. We are in the habit of using it with a slight modification, as the more usual prescription we have recommended has been bicarb. of potassa combined with the ordinary Dover's powder, which we have found very beneficial. Our own experience can testify to the pleasant sensations produced by the packing in cotton, in every way so much more grateful to the patient than the greasy appliances so much in vogue in the form of liniments.

The treatment adopted by our author in both typhoid and typhus fever he has condensed into ten aphorisms. So far as the treatment of the two diseases is concerned, there is no difference of importance in the treatment, except that in typhoid fever, you must be always on the lookout for bowel disturbance, and take measures to prevent or check it.

"My first rule is this: never give up a fever patient until he is plainly *in articulo mortis.* Patience, perseverance, and steady adherence to a well-devised plan of treatment are, in fever cases, often crowned with success under the most discouraging circumstances.

"2. When you undertake a case of this kind, insist upon having a good nurse; give her full instructions, if possible in writing, and require her to keep a note of all food and medicine administered by her.

"3. It is not advisable that you should see your patient too often; once, or at most twice a day, will be, in general, quite sufficient.

"4. Do not be anxious to account or provide for every new symptom or change that may arise. Do not treat symptoms too much, but look to the general condition of your patient. Diarrhœa, delirium, coma, hemorrhage, are the symptoms which you should look out for and be prepared instantly to meet.

"5. Watch the pulse closely both as to quality and frequency. Always keep in view that increase of quickness is a sure sign of increasing debility, and that diminution of quickness (when not referable to any cerebral affection) is the reverse.

"6. Never allow a day to pass without carefully examining the abdomen of your patient, and especially the region of the bladder.

"7. Do not be anxious about the action of the bowels, and the so-called secretions. Many a patient in fever has fallen a victim to the *diligentia medici nimia,* in improving "the secretions." You may make them perfect in color and consistence, and yet your patient will die.

"8. Restrain diarrhœa and hemorrhage, and when, in typhoid fever, you have fairly locked up the bowels, keep them so. Patients will go for four or six days, or even longer, without suffering inconvenience from this state of constipation.

"9. From the first moment of your attendance let it be your constant and anxious effort to uphold the vital power of your patient, by nitrogeneous food given as broths, and carbonaceous food, selected from farinaceous substances, and from alcoholic fluids, such as wine, brandy, or other fermented liquors.

"10. Increasing delirium and coma are signs of increasing debility: both indicate the necessity for additional support; coma is often benefited by freely blistering the nucha and scalp, and even the region of the heart." (p. 122.)

He arranges the cases of erysipelas into five distinct classes. A slight form of the disease, affecting the head or face only, is usually removed in a few days by rest and light nourishment, or, in some instances, in spite of depressing treatment. In the second variety he places those who sink rapidly in twenty-four or forty-eight hours, as if from the overwhelming effect of some poison. The third class comprises those who have a tendency to fatal results if left alone, but recover under suitable treatment. In the fourth are those who pass through the ordinary stages of the disease more or less favorably, but subsequently exhibit the secondary phenomena of the disease; and in the fifth or last class, not only do the secondary phenomena of the disease manifest themselves, but by some means a morbid material finds its way into the circulation, and as a result of this, formations of pus take place in various parts of the body, and the patient dies of purulent infection or pyæmia, as it is called.

He therefore gives beef tea and stimulants in precisely regulated doses—chloric ether, ammonia or bark. Two different forms of stimulants, as brandy and beer, or gin, etc., should not be given at the same time; and it is necessary to avoid exciting nausea, hiccough and vomiting, by giving too much at any one time, or by too great a variety of stimulants or food. The free use of brandy, early and persistently, is necessary when delirium and coma are likely to supervene. "The lower you keep your patient, the greater will be the tendency to delirium or coma, and the more violent and profound will either be, and the development of either is an indication for pressing the treatment in the same or greater doses." We are not to care so much about the secretions as those do who imagine it necessary that they should be altered by doses of calomel or gray powder. If necessary give gentle laxatives, but it is always to be borne in mind that the poison of erysipelas is exceedingly depressing in its action, and that the object of all treatment must be, first, to antagonize the poison, and secondly, to uphold the patient's powers, to enable him to bear up against one of the most debilitating diseases to which the human frame is liable. He inclines to think alcoholic stimulants are *antidotes* to the erysipelatous poison.

"If," says he, "I were to be restricted to any one remedy in the treatment of this disease, I should assuredly choose brandy. With a commissariat well supplied with brandy and simple means to keep the bowels open, I think I could engage to keep erysipelas at a minimum among the wounded in our army in the Crimea."

The sesquichloride of iron, so much recommended by some, he considers as useless, except that its use keeps away greater evils, in the form of depressing drugs.

We pass now to the treatment advised for pneumonia, and, with slight modifications, for acute internal inflammations. What mode of treatment will aid a speedy resolution of inflammation with least injury to the patient's constitution, and with the shortest convalescence? How shall we realize the direction of Asclepieadeus that the treatment shall be at once "*Cito, tuto et jucunde.*" Dr. Todd's plan is easily stated, so far as its general features are concerned. It is *not* by withdrawing blood, the supposed fuel of all inflammation, or by reducing vital power, but by the promotion of the free exercise of certain excretory functions, by which the blood may be purified and certain matters removed from the system which, remaining in it, tend to keep up a state very favorable to inflammatory affections. Excite the functions of the skin, the kidneys, and, in a less degree, of the intestinal mucous membrane.

> "An important feature in this plan of treatment is to counteract, as far as possible, every influence of a depressing nature; and *though the exhibition of stimulants does not form a necessary part of it*, still the aim should be to uphold the patient's strength. This is best done by providing for him frequent supplies of good beef tea or other animal broth. Solid food you cannot give in these cases, for not only is it digested with great difficulty, but also the want of appetite prevents it being taken; but by small quantities of beef tea frequently supplied, a large amount of easily appropriated nutriment may be administered in the course of twenty-four hours. When the vital powers are clearly depressed,

with a pulse *increasing in quickness*, or when the patient has been previously accustomed to live well, or in the habit of indulging in the use of alcoholic drinks, then wine or brandy, or, what is really the proper way of expressing it, *alcoholic food*, must be exhibited." (p. 265.)

One precaution in regard to the administration of stimulants must be remembered. They should be given in small quantities at a time largely diluted with water.

Blood-letting is rarely necessary for the treatment of pneumonia. Where the pain is severe the application of leeches may be successful for its relief. General blood-letting should be restricted to those persons in whom the dyspnœa is very severe, when it is expedient to take blood from the arm. But as a general rule, where doubt exists as to the propriety of this procedure, decide in the negative rather than in the affirmative.

Such is a general sketch of the plans of treatment recommended in the book before us, and whether or not we agree with it, it must be admitted that in its leading characteristics it is, and has been, carried out in the practice of a large number of the daily becoming prominent men of the profession, and its expression by so able a pathologist and intelligent a physician as Dr. Todd, has simply stamped with the authority of a great name what hitherto had been done in a sort of revolutionary and provisional manner. An able pathologist and physiologist like Dr. Todd was not led away by the appearance of success, as evidenced by mere numbers cured by this plan of treatment. Still less would he have taught a system founded upon merely an empirical basis. Our liberal extracts will have furnished a sufficiently correct idea of his general plan of treatment of acute disease, with such modifications, of course, which the circumstances of the individual case might suggest at the time. Certain leading features of this treatment are plainly discernible—elimination by the drainage of the supposed offending material in the blood by the emunctories of the skin, kidneys and bowels; and secondly, the use of means to support the patient while these processes were kept in action. An undue importance seems to be attached to the last part of the plan, on our author's part, and one is tempted to think Dr. Todd a not unworthy follower of the doctrine of our old friend, Capt. Polwarth, of the light infantry, whose opinions in favor of generous diet in febrile excitement, are so graphically recorded in "Lionel Lincoln." Yet, as herein consisted the very great difference in the plan now generally adopted from that which formerly prevailed, that it is necessary to support the patient during his journey to convalescence, that the greatest source of fear was lest the patient should break down while undergoing the eliminative treatment, whether instituted by art or carried on by nature, we may pardon the earnestness with which this point is urged, and receive with some allowance the recommendation of the special means by which the support was to be made. We do not suppose that Dr. Todd means that he should give all patients with typhoid fever or pneumonia, brandy; that he used it as indiscriminately as the celebrated John Brown is said to have done; but that seeing the tendency to running down in these diseases was so apt to be overlooked, he directs especial attention to the means of warding off this evil. Indeed, a careful analysis of the cases he records shows that he did not himself uniformly prescribe stimulants, but that he did always make a point to have the vital powers sustained without artificial aid, if that could be, or with aid if it could not otherwise be accomplished. It must be borne in mind, also, that the patients whose cases are given, belong to that class found in the hospitals of large cities, of enfeebled vital powers, even when in their average health, with very feeble powers of resistance to any agents of a depressing nature. While, therefore, we may concur in general with our author in his mode, and more especially in his theory of treatment, we cannot always indorse the special applications of them in every case he records.

Let us consider the principles which govern and underlie this treatment, so revolutionary in its character, if we take the text-books as the authorized expositions of the settled authorities. All will agree with Dr. Todd in the remark, that "the real basis of all pathological inquiry must be clinical research made with the fullest appreciation of the facts of anatomy and physiology; *mere* morbid anatomy leads necessarily to erroneous views of pathology and practice." This becomes of greater importance than ever, if we agree with him in the opinion that "disease is cured by natural processes, to promote which, in their full vigor, vital power must be upheld. Remedies, etc., are useful only so far as they may excite, assist or promote these natural curative processes." To observe those diseases wherein the natural curative powers are sufficient for the relief of the patient—to note wherein these curative processes consist and how they differ from the morbid phenomena, must be of essential importance, in order to a fair trial of this manner of treatment. We shall, for want of space, confine our future remarks to inflammatory disease, and particularly pneumonia. What is the general pathology of inflammation?

> "Inflammation is a deranged nutrition. Like the normal nutrition, it involves supply and waste, and as the latter is considerable, the former will be proportionably needed. The tendency in inflammation is to the more or less rapid formation of abnormal products, such as lymph and pus; and the supplies for these formations must be drawn from the blood or from the tissues, in both cases with the effect of more or less exhaustion of vital force, in the latter with more or less extensive organic disintegration. The active chemical process which accompanies all these changes, engenders the great heat of the inflamed part.
>
> "The more this process of inflammation draws upon the blood, the greater will be the exhaustion of the vital force, and the more the whole frame will suffer; the more it feeds on the tissues, the greater will be the difficulty of the reparative process." (p. 171.)

Now let us ascertain, as far as possible, the successive steps in those cases in which little or no interference with the course of the disease has taken place. We think they are well drawn in the five propositions which follow, which refer to the course of pneumonia.

> "First, the hot, often burning skin, which is so generally present in the first stages of pneumonia, will be exchanged for one bedewed with moisture, generally to the extent of free sweating.
>
> "Secondly, along with this sweating process, there will be one of increased flow of urine, and very often a free precipitate of brick-dust sediment, lithate of soda, more or less deeply colored.
>
> "Thirdly, not unfrequently, expectoration will become freer, the sputa more easily discharged, they will lose their characteristic reddish, rusty color, and often become very profuse and even purulent. Now and then the purulent sputa are so abundant that it is difficult to imagine that they can have come from any other source than an abscess.
>
> "Fourthly, the chemical characters of the pneumonic sputa exhibit an interesting contrast with those of the urine. In the height of the inflammatory state, the sputa contain common salt (chloride of sodium) in abundance, and the urine is entirely devoid of it. As the inflammation becomes resolved, the salt returns to the urine and leaves the sputa.
>
> "Lastly, while all these changes are going on, the physiological functions which have been disturbed by the local malady, gradually approach their normal state. The quickened breathing, the accelerated pulse, the unnatural generation of heat, gradually subside." (p. 168.)

But though this is certainly a true history of the progress towards cure without intervention, yet these processes are often interrupted, or they are ill proportioned to the work they have to effect. In what way can we promote their restoration when interrupted, or assist them when too feeble? Theoretically, we are taught in the text-books that the chief means of subduing inflammation are to be found in free depletion and other antiphlogistics; practically, the large majority of experience shows that pneumonia gets well without any such agencies. Our author well says:

> "Bear in mind, as a reason against adopting a violent course of treatment, that pneumonia has, on the whole, a decided tendency to get well of itself. I have never had the courage, and I don't think I ever shall, to let a patient with pneumonia alone, and trust to the *expectant system*, as it is called; and I am not acquainted with any satisfactory observations which have been made on this point; but there can be little doubt, I think, that the general tendency of the disease is towards recovery." (p. 161.)

If the plan of treatment adopted by Dr. Todd is carried out by the exhibition of those agents which promote diaphoresis and diuresis, and the proper evacuation of the bowels and of food is supplied in those forms in which it is best assimilated, we guide the patient easily and comfortably through the intricate paths he must traverse to recovery. Certain land-marks will serve to guide us, and may very materially affect our prognosis. And it is interesting to note in this connection, how old and apparently obsolete doctrines are revived by modern researches, under a somewhat different guise 'tis true, but retaining all their distinctive features. Thus the Hippocratic notion of critical days, after a long burial, finds advocates to some extent in these modern days, and is revived in a modified form in the pages of the book before us.

> "With respect to the modes of termination of pneumonia generally, let me say a few words. When recovery takes place in this disease there is always, I believe, some kind of *critical* evacuation, either by sweats, or by urine, or by the free discharge of a purulent fluid from the bronchial tubes, or by pulmonary abscess. Some physicians look upon the herpetic eruption, which sometimes appears upon the lips in this disease, as of a *critical* nature; but I am disposed to think that it is rather a symptom of the disease, because it almost always occurs very early. Still, when you meet with it, you may regard it, I think, as a favorable sign; for most of the cases in which I have seen it, have done well. . . . . I am not prepared to hold the seventh, fourteenth, and twenty-first days as *critical*, as was the custom of the old physicians, but am contented with believing that there is a tendency in the disease to terminate on or near these days. Looking to the recorded cases of this disease, a *critical* evacuation by the urine is by far the most common; from the sixth to the tenth day this excretion being generally considerably increased, and having a tendency to deposit lateritious sediments. The *critical* evacuation next in order of frequency is that by sweating; and if treatment were adopted to favor the secretion of the skin, this would be far more common, I believe, than has hitherto been observed. A *critical* evacuation by the free discharge of purulent fluid from the bronchial tubes is not common, but I have seen it so profuse as to give rise to the supposition that an abscess had formed in the lung, and had emptied itself through a bronchial tube, when such was really not the case." (pp. 274–5.)

The number of cases of pneumonia coming under the care of Dr. Todd, during 19 years of service at King's

College Hospital, averages a little over 4 a year. The inference, and we think it will hold good elsewhere, is, that pneumonia is not so frequent a disease as many suppose. The results of these cases under the treatment adopted in earlier years, as well as that modified by his later experience, are worthy of comparison.

> "The cases are in all 78, and they have been taken just as they have been noted down in the Case-books. They may be arranged into two periods: the one from 1840 to 1847, the other from 1847 to 1859. In the former of these, which may be termed *the period of reducing treatment*, the remedies employed were, bleeding, the application of blisters, the exhibition of tartar-emetic, and the more or less free use of mercury; while in the latter, which may be styled *the period of supporting treatment*, the patients were treated very much in the manner which I have detailed to you in this and other lectures on this subject, though in a few cases calomel and opium were given. Now, the total number of cases, as I before mentioned, was 78, and of these 10 were fatal.
>
> "Remember that I am now merely stating the leading points in the report, for time will not permit me to enter into any lengthened detail. Of the seventy-eight cases, twenty-five occurred in the first period, and four of these proved fatal, or about one in every six. In the second, the number of cases was fifty-three, and in these there were only six deaths, or about one in nine; fairly leading, I think, so far as we may judge from the relative mortality in these two periods, to the inference that the supporting plan of treatment is more favorable (certainly not less favorable) in its results than the severer measures which are frequently had recourse to in this disease." (pp. 277–8.)

So far, therefore, as the results of his modern treatment are indicated above, the success appears to be very satisfactory. Unfortunately, however, all such statistics approximate only to the true conclusion, warranted by the facts thus collected together, and Dr. Todd's cases must be received with the same caution, and subject to the same allowances which he has shown to be necessary in estimating similar collections of cases derived from other quarters. Few means of diffusing knowledge are so potent, for good or for evil, as statistics in medicine. Under the same name are ranged together very different conditions of disease, as very various grades of severity. The moral atmosphere (so to speak) which surrounds each patient—his age and quality of constitution—even the disturbing influences upon the treatment, from neglect, want of regularity and other little matters easily understood, but which cannot be expressed by figures, all vitiate the confidence to be placed in the results arrived at. So much also depends upon the mental bias of the party recording the history of each case, that we cannot be too much on our guard against absolute conclusions thus reached. The greatest sagacity Quetelet has shown is necessary to distinguish the degree of importance to be attached to each influencing element. The special difficulties in statistics of pneumonia, are pointed out in the following passage:

"The numerical returns which we have respecting pneumonia are unsatisfactory, because in those returns all cases of the disease, whether asthenic or otherwise, and whatever be the extent of lung involved in the inflammation, are classed together. Suppose you were making inquiry respecting the results of treatment in cases of burns, how little information could you derive from numerical returns, if the cases were not classified according to the extent of surface involved in the burn! It is just so with pneumonia; we have as yet no classified returns; but, looking to general experience, and such numerical returns as we have, it may be stated that, as in burns, pneumonia is fatal in proportion to the extent of pulmonary surface involved; but that, in cases where one-fourth or a less portion of lung is inflamed, it has, on the whole, a very decided tendency to recover. On the other hand, when the whole of one lung is involved, or when a considerable extent of both lungs is engaged, the tendency is as decidedly to a fatal result.

"The fatality of pneumonia is also much influenced by the period at which the disease may have been detected, and some kind of medical treatment adopted, to the extent even of the mere adoption of the horizontal position in a warm bed. Thus, Grisolle's tables show that when the cases were brought under treatment within the first three days, only one-thirteenth died; but if not brought in before the fourth day, one-eighth died; if on the seventh, one-third; on the eighth, so large a proportion as one-half died. Age likewise exercises an important influence, and there can be no doubt that (excluding infancy, respecting which our facts are of the most unsatisfactory nature) the mortality increases with the age; and at the advanced periods of life, pneumonia must be regarded as a very fatal disease.

"There are those who think, that when pneumonia affects the apex of the lung, it has a more fatal tendency than when it affects the base. I myself lean very much to this opinion, because in such cases (without referring to complication with tubercles) the disease is generally of the low or typhoid character; nay, under such circumstances, the pneumonia may be erratic, and like erysipelas, pass from one part to another of the same lung, and even to the opposite.

"It may, indeed, I think, be laid down, that in all these cases, the pneumonia has a fatal tendency in proportion as it tends to exhaust, whether by its extent, or through too feeble powers of resistance on the part of the patient, or by exposure to cold and want of food, or by mental or bodily exertion during the early stages of the disease, or through some powerfully depressing influence connected with the original exciting cause of the disease, such as influenza, rheumatic fever, etc.

"But if we take cases of pneumonia occurring in persons in the full vigor of life, and not involving a very large portion of the lung, and coming under treatment early, we may regard it as a disease of not very fatal tendency, but rather prone to get well, when the vital powers of the patient have not been too much depressed; and such cases will get well whatever be the treatment early adopted, provided no great error has been committed in either direction, either in that of reducing too much or of supporting too much, and it must be obvious to you, that that which most easily admits of correction is the latter." (pp. 210—212.)

Our readers will pardon so long an extract, for the valuable lessons it inculcates.

A word or two as to the style of the book. It is written in that racy, vigorous manner which aims at clearness of definition and terseness of expression rather than logical precision, or the charms of rhetorical grace. There are, we think, a few apparent inconsistencies throughout, which would probably have disappeared in a second edition, had the author been spared to revise his work. He lays stress on the "power of vital resistance" possessed by the patient, and also that something is due to what is termed the *epidemic constitution*; "for," says he, "it cannot be doubted that typhus fever, erysipelas and some other diseases, are much more fatal in some seasons than in others, and this may, to a certain extent, obtain in the case of pneumonia." How does this square with the author's assertion in another place, that no change of type has occurred in diseases in a number of years?

We have shown our author's recommendation of the supporting treatment, in combination with the means suggested for the elimination of the supposed morbid constituents from the system. Let not our readers suppose that Dr. Todd, or we, recommend the indiscriminate use of these remedies on all occasions, that when disease of any kind exists, brandy and alkalines are all that are necessary. This would simply be the evil, in another form, of some unwise practitioners who would seem to argue in this wise. Given, an inflammatory disease, required to find how much blood-letting and purging the patient will bear, and how soon the gums could be affected by mercury. The really essential parts of their practice of scientific medicine, consists in the close questioning of nature, as to the signs which denote the existence of disease, and as to her modes of procedure under its influence to discern those processes which tend to recovery, from those which lead to a fatal result—to estimate the ability of the patient's constitution to carry on these curative processes unaided—to learn the precise times when assistance may be needed, and the amount of assistance required for a happy issue; and in the skillful appliance of those means within our reach, whether regiminal or dietetic or therapeutic, to augment, if necessary, the efforts nature makes towards recuperation. We must also be impressed with the conviction that sooner or later debility ensues from acute disease, and very often long before we are capable of recognizing its presence, unless we are constantly vigilant for its approach. To do this with safety to our patients, and with satisfaction to ourselves, requires untiring and unremitting attention and study. A thorough observation of the natural history of disease thus carried on, will, we think, lead to the conviction so tersely expressed by our author.

> "Save in the case of antidotes, which directly antagonize the proximate cause of the morbid state, medicines promote the cure of acute disease by assisting and quickening some natural curative process. And he is the wisest practitioner, and will be the most successful therapeutist, who watches carefully the natural processes of cure: in other words, who studies the phenomena, both anatomical and physiological, which accompany them, and of which, indeed, they consist." (p. 168.)

DALTON ON PHYSIOLOGY.

A Treatise on Human Physiology, designed for the use of Students and Practitioners of Medicine. By JOHN C. DALTON, Jr., M.D., Professor of Physiology and Microscopic Anatomy in the College of Physicians and Surgeons, New York; Member of the New York Academy, etc., etc. Philadelphia: Blanchard & Lea, 1859. (pp. 608.)

THE principal object which Professor Dalton had in view, in writing the work before us, is set forth in the following extract from his preface:

> "It has been the object of the author more particularly to present. at the same time with the conclusions which physiologists have been led to adopt on any particular subject, the experimental basis upon which those conclusions are founded; and he has endeavored, so far as possible, to establish or corroborate them, by original investigation or by a repetition of the labors of others. This is more especially the case in that part of the book (section 1) devoted to the function of nutrition; and as a general thing, throughout the work, any statement of experimental facts, not expressly referred to the authority of some other writer, is given by the author as the result of direct personal observation."

This is an exceedingly interesting feature of the work. It is not a rehash of former authorities, but strictly an original work founded upon or occupied by the experiments of the author himself. If it has not the variety of Carpenter or Draper in its pages, it has what is far better, a well executed digest of the know-able and prove-able in physiology—the record of *facts* instead of the history of theories, however well supported and plausible. In this respect the work is an honor to American medical literature. It will take rank with Todd and Bowman, or Valentin, or any other original work on physiology in the world.

To the student of physiology no work as yet published could be more satisfactory as a guide, not only to a correct knowledge of the physiological subjects embraced in its limits, but what is of far greater importance, it will prove the best teacher of the modes of investigation, by which that knowledge can be acquired and, if necessary, tested. As an aid in this physiological discipline of the mind, if we may so term it, the student will find it invaluable and when he has carefully conned its pages, he will be better prepared to attack the more bulky encyclopediac manuals of physiology, which receive within their ample lids, like their prototype of old, the ark of Noah, all things clean or unclean under the guise of physiology. Fortified with the knowledge obtained in the perusal of our author's work, he will be able better to discern the true from the plausible, the proven from the hypothetical, the ascertained and verified from that which yet remains a conjecture. He will shun alike Barry's spiral formation of the muscular fibril, his theories of reproduction, and other absurdities as striking, which repose side by side with the recognized truths of physiological science in the wide expanse of some of the larger books on physiology.

The subjects treated in this volume are comprised in three divisions. The first embraces *Nutrition*, or those actions or processes which refer to the preservation of the internal structure and healthy organization of the individual. As with certain modifications they take place in vegetables as well as in animals, they are known as the *Vegetative functions*. The second comprehends the phenomena of the *Nervous system*. From the fact that they belong to animals exclusively, they are termed the *Animal functions*. The third section is devoted to the entire process of *Reproduction*, or the continuation and preservation of the species.

In the first section, which is divided into sixteen chapters, are discussed the proximate principles, the varieties and uses of food, the processes of digestion, absorption, the nature of the bile, the office of the liver in the formation of sugar, the functions of the spleen, the blood, respiration, animal heat, the circulation, secretion, and excretion. We must content ourselves with a brief notice of the treatment of only a few of these topics. The first four chapters treat of proximate principles. Following the guide of Robin and Verdeil, he divides them into three classes—inorganic, crystallizable substances of organic origin and organic substances. These chapters are admirably condensed and are full of interesting matter. An extract would do injustice, unless we extract the whole, for which we have not the space. We content ourselves with the recommendation of its careful perusal and study.

The nature, etc., of food he describes in a short chapter—too short for the importance of the subject. It is less satisfactory than the other portions of the volume, being mainly condensed from Pereira's treatise of food and diet. We subjoin the following account of experiments as to the nature of food. Such experimenters deserve to be canonized for putting their own bodies rather than those of their patients to the rack.

> "This observer (Lehman) confined himself first to a purely animal diet for three weeks, and afterwards to a purely vegetable one for sixteen days, without suffering any marked inconvenience. He then put himself upon a regimen consisting entirely of non-nitrogenous substances—starch, sugar, gum and oil, but was only able to continue this diet for two or at most for three days, owing to the marked disturbance of the general health which rapidly supervened. The unpleasant symptoms, however, immediately disappeared on his return to an ordinary mixed diet. The same fact has been established more recently, by Dr. William A. Hammond, Assistant Surgeon U. S. Army, in a series of experiments which he performed upon himself. He was enabled to live for ten days on a diet composed exclusively of boiled starch and water. After the third day, however, the general health began to deteriorate, and became very much disturbed before the termination of the experiment. The prominent symptoms were debility, headache, pyrosis, and palpitation of the heart. After the starchy diet was abandoned it required some days to restore the health to its usual condition." (p. 76.)

From food to digestion is a natural transition. This important function is ably discussed by Dr. Dalton. Where shall we find a more concise view of the process as a whole than the following? After a short notice of the different structures the food has to pass over, and the various contrivances to take in the matters presented to them, he adds:

> "Furthermore, the digestive secretions also vary in these different regions. In its passage from above downward, the food meets with no less than five different digestive fluids. First, it meets with the *saliva* in the cavity of the mouth; second, with the *gastric juice* in the stomach; third, with the *bile*; fourth, with the *pancreatic fluid*; and fifth, with the *intestinal juice*. It is the most important characteristic of the process of digestion, as established by modern researches, that *different elements of the food are digested in different parts of the alimentary canal, by the agency of different digestive fluids.* By their action, the various ingredients of the alimentary mass are successively reduced to a fluid condition, and are taken up by the vessels of the intestinal mucous membrane. The action which is exerted upon the food by the digestive fluids, is not that of a simple chemical solution. It is a transformation by which the ingredients of the food are altered in character, at the same time that they undergo. the process of liquefaction. The active agent in producing this change is, in every instance, an organic matter which enters as an ingredient into the digestive fluid, and which, by coming in contact with the food, exerts upon it a catalytic action, and transforms its ingredients into other substances. It is these newly-formed substances which are finally absorbed by the vessels, and mingled with the general current of the circulation." (p. 88.)

We are indebted for a great part of our knowledge of the processes of digestion to the observations and experiments of Dr. Beaumont upon Alexis St. Martin, who had a gastric fistula. Subsequent observers, as Schwann, Bernard, Lehman, and others, have in the main supported his conclusions. Dr. Dalton has instituted a large number of similar experiments upon the lower animals, especially dogs, in whom he first ingeniously establishes a fistulous opening into the stomach, so that the gastric juice can be withdrawn at the will of the operator. A question arises as to the circumstances under which the gastric juice is secreted.

> "The gastric juice, like the saliva, is secreted in considerable quantity only under the stimulus of recently ingested food. Dr. Beaumont states that it is entirely absent during the intervals of digestion; and that the stomach at that time contains no acid fluid, but only a little neutral or alkaline mucus. He was

able to obtain a sufficient quantity of gastric juice for examination, by gently irritating the mucous membrane with a gum-elastic catheter, or the end of a glass rod, and by collecting the secretion as it ran in drops from the fistula. On the introduction of food, he found that the mucous membrane became turgid and reddened, a clear acid fluid collected everywhere in drops underneath the layer of mucus lining the walls of the stomach, and was soon poured out abundantly into its cavity. We have found, however, that the rule laid down by Dr. Beaumont in this respect, though correct in the main, is not invariable. The truth is, the irritability of the gastric mucous membrane, and the readiness with which the flow of gastric juice may be excited, varies considerably in different animals; even in those belonging to the same species. In experimenting with gastric fistulæ on different dogs, for example, we have found in one instance, like Dr. Beaumont, that the gastric juice was always entirely absent in the intervals of digestion; the mucous membrane then presenting invariably either a neutral or slightly alkaline reaction. In this animal, which was a perfectly healthy one, the secretion could not be excited by any artificial means, such as glass rods, metallic catheters, and the like; but only by the natural stimulus of ingested food. We have even seen tough and indigestible pieces of tendon, introduced through the fistula, expelled again in a few minutes, one after the other, without exciting the flow of a single drop of acid fluid; while pieces of fresh meat, introduced in the same way, produced at once an abundant supply. In other instances, on the contrary, the introduction of metallic catheters, etc., into the empty stomach has produced a scanty flow of gastric juice; and in experimenting upon dogs that have been kept without food during various periods of time and then killed by section of the medulla oblongata, we have usually, though not always, found the gastric mucous membrane to present a distinctly acid reaction, even after an abstinence of six, seven, and eight days. There is at no time, however, under these circumstances, any considerable amount of fluid present in the stomach; but only just sufficient to moisten the gastric mucous membrane, and give it an acid reaction." (pp. 105–6.)

The total amount of gastric juice secreted daily is enormous. By direct experiment, our author ascertained that 50 grains of meat were dissolved by one ounce and a half of gastric juice, or 33⅓ grains to the ounce.

"One pound of meat is only a moderate meal for a medium-sized animal; and yet to dissolve this quantity, no less than *thirteen pints* of gastric juice will be necessary. This quantity or any approximation to it would be altogether incredible, if we did not recollect that the gastric juice, as soon as it has dissolved its quota of food *is immediately reabsorbed*, and again enters the circulation, together with the alimentary substances which it holds in solution. The secretion and reabsorption of the gastric juice then go on simultaneously; and the fluids which the blood loses by one process, are incessantly restored to it by the other. A very large quantity, therefore, of the secretion may be poured out during the digestion of a meal, at an expense to the blood, at any one time, of only two or three ounces of fluid. The simplest investigation shows that the gastric juice does not accumulate in the stomach, in any considerable quantity, during digestion; but that it is gradually secreted so long as any food remains undissolved, each portion as it is digested being disposed of by reabsorption together with its solvent fluid. There is accordingly, during digestion, a constant circulation of the digestive fluids from the blood-vessels to the alimentary canal, and from the alimentary canal back again to the blood-vessels.

"That this circulation really does take place is proved by the following facts: first, if a dog be killed some hours after feeding, there is never more than a very small quantity of fluid found in the stomach, just sufficient to smear over and penetrate the half-digested pieces of meat; and secondly, in the living animal gastric juice drawn from the fistula, five or six hours after digestion has been going on, contains little or no more organic matter in solution than that extracted fifteen to thirty minutes after the introduction of food. It has evidently been freshly secreted; and in order to obtain gastric juice saturated with alimentary matter, it must be artificially digested with food in test-tubes where this constant absorption and renovation cannot take place." (pp. 115–16.)

The quantity of gastric juice has been estimated variously by other observers. Bidder and Schmidt state the daily secretion at an amount equal to a quarter of the weight of the whole body. Lehman places it at one-tenth, and Harley at one-fifteenth of the weight of the whole body.

The property of the *pancreatic fluid* in forming an emulsion with fatty substances, first observed by Bernard, has been denied by Bidder and Schmidt, and Fierichs, who claim to have repeated his experiments with opposite results. Lehman apparently takes the same view, as he quotes their accounts with approbation. Our author corroborates the statement of Bernard:

"We have frequently repeated this experiment with different specimens of pancreatic juice obtained from the dog, and have never failed to see that the emulsion produced by it is by far more prompt and complete than that which takes place with saliva, gastric juice, or bile. The effect produced by these fluids is in fact altogether insignificant, in comparison with the prompt and energetic action exerted by the pancreatic juice. The emulsion produced with the latter secretion may be kept, furthermore, for at least twenty-four hours, according to our observations, without any appreciable separation of the oily particles, or a return to their original condition.

"The pancreatic juice, therefore, is peculiar in its action on oily substances,

> and reduces them at once to the condition of an emulsion. The oil, in this process, does not suffer any chemical alteration. It is not decomposed or saponified, to any appreciable extent. It is simply *emulsioned*, that is, it is broken up into a state of minute subdivision, and retained in suspension by contact with the organic matter of the pancreatic juice. That its chemical condition is not altered is shown by the fact that it is still soluble in ether, which will withdraw the greater part of the fat from a mixture of oil and pancreatic juice, as well as from the chyle in the interior of the intestine. In a state of emulsion the fat, furthermore, is capable of being absorbed, and its digestion may be then said to be accomplished." (p. 124)

The action of the pancreatic juice in changing starch into sugar is barely alluded to as the result of the mixed intestinal and pancreatic fluids. Now, according to well-guarded experiments, it can effect this change alone, and with much greater rapidity and at a lower temperature than the saliva or any other known ferment. To a certain extent also it assists in the digestion of albuminous substances and, in this respect, is but little inferior to the gastric juice. The importance of this fluid in digestion has been too little attended to. It is usually passed by with the remark that it emulsions fats, and its other qualities are not alluded to. This may be accounted for by the difficulty which attends the obtaining sufficient of the fluid for the purposes of experiment, but as we know that no such lions stand in the path of Dr. Dalton, we are at a loss to account for the omission of all reference to these characteristics.

We cannot pass by so important an organ as the liver, without paying to it our respects. We must make some inquiries as to the bile, its secretion and reabsorption; and to the formation of sugar by a metamorphosis of some of the organic ingredients of the bile itself, and its subsequent decomposition in the blood. Two or three moot points concerning these deserve our attention. Dr. Dalton thinks the bile exerts no special action on either albuminoid, starchy or oleaginous matters, when mixed with them in test-tubes and kept at a temperature of 100° F., and, therefore, it has no direct influence in the digestion of these substances. Bernard, however, states that when the bile comes in contact with the chyme, on its escape from the stomach into the duodenum, it (the bile) precipitates the digested azotized matters and even the pepsin. Corvisart and Harley, admitting that a precipitate takes place, deny that it is pepsin, but contend that it is the precipitate of one or more of the constituents of the bile itself. All authorities agree that no effect is produced by the union of bile with amylaceous articles, and that it has very little, if any thing, to do with albuminous substances. But with respect to fatty matters, considerable controversy prevails. Drs. Marcet and Leutz have shown that bile does not affect the neutral fats, but forms an emulsion with the fatty acids. Is bile simply an *excrementitious fluid*, as its small share in digestion would at first indicate? The argument is well stated on this question by our author:

> "1st. The bile is produced, unlike all the other animal secretions, from venous blood; that is, the blood of the portal vein, which has already become contaminated by circulation through the abdominal organs, and may be supposed to contain disorganized and effete ingredients; and
>
> "2d. Its complete suppression produces, in the human subject, symptoms of poisoning of the nervous system, analogous to those which follow the suppression of the urine, or the stoppage of respiration, and the patient dies, usually in a comatose condition, at the end of ten or twelve days.
>
> "The above circumstances, taken together, would combine to make it appear that the bile is simply an excrementitious fluid, not necessary or useful as a secretion, but not only destined, like the urine, to be eliminated and discharged. Nevertheless experiment has shown that such is not the case; and that, in point of fact, it is necessary for the life of the animal, not only that the bile be secreted and discharged, but furthermore that it be discharged into the intestine, and pass through the tract of the alimentary canal. The most satisfactory experiments of this kind are those of Bidder and Schmidt, in which they tied the common biliary duct in dogs, and then established a permanent fistula in the fundus of the gall-bladder through which the bile was allowed to flow by a free external orifice. In this manner the bile was effectually excluded from the intestine, but at the same time was freely and wholly discharged from the body, by the artificial fistula. If the bile therefore were simply an excrementitious fluid, its deleterious ingredients being all eliminated as usual, the animals would not suffer any serious injury from this operation. If, on the contrary, they were found to suffer or die in consequence of it, it would show that the bile has really

some important function to perform in the intestinal canal, and is not simply excrementitious in its nature.

"The result showed that the effects of such an experiment were fatal to the animal. Four dogs only survived the immediate effects of the operation, and were afterward frequently used for purposes of experiment. One of them was an animal from which the spleen had been previously removed. and whose appetite, as usual after this operation, was morbidly ravenous: his system, accordingly, being placed under such unnatural conditions as to make him an unfit object for further experiment. In the second animal that survived, the communication of the biliary duct with the intestine became re-established after eighteen days. and the experiment consequently had no result. In the remaining two animals, however, every thing was successful. The fistula in the gall-bladder became permanently established; and the bile-duct, as was proved subsequently by *post-mortem* examination, remained completely closed, so that no bile found its way into the intestine. Both these animals died; one of them at the end of twenty-seven days, the other at the end of thirty-six days. In both, the symptoms were nearly the same, viz. constant and progressive emaciation, which proceeded to such a degree that nearly every trace of fat disappeared from the body. The loss of flesh amounted, in one case to more than two-fifths, and in the other to nearly one-half the entire weight of the animal. There was also a falling off of the hair, and an unusually disagreeable, putrescent odor in the fæces and in the breath. Notwithstanding this, the appetite remained good. Digestion was not essentially interfered with, and none of the food was discharged with the fæces; but there was much rumbling and gurgling in the intestines, and abundant discharge of flatus, more strongly marked in one instance than in the other. There was no pain; and death took place, at last, without any violent symptoms, but by a simple and gradual failure of the vital powers. (pp. 159—161.)

"The bile, therefore, is a secretion which has not yet accomplished its function when it is discharged from the liver and poured into the intestine. On the contrary, during its passage through the intestine it is still in the interior of the body, in contact with glandular surfaces, and mingled with various organic substances, the ingredients of the intestinal fluids, which act upon it as catalytic bodies, and produce in it new transformations. This may account for the fact stated above, that the bile, though a constant and uninterrupted secretion, is nevertheless poured into the intestine in the greatest abundance immediately after a hearty meal. This is not because it is to take any direct part in the digestion of the food; but because the intestinal fluids, being themselves present at that time in the greatest abundance, can then act upon and decompose the greatest quantity of bile. At all events, the biliary ingredients, after being altered and transformed in the intestine, as they might be in the interior of a glandular organ, re-enter the blood under some new form, and are carried away by the circulation, to complete their function in some other part of the body." (pp. 163-4.)

The formation of sugar by the liver, first noticed by Bernard, is carefully explained in chapter 9th. The following extracts give us a fair view of what has been ascertained on this subject:

> "The sugar of the liver is not produced in the blood by a direct decomposition of the elements of the circulating fluid in the vessels of the organ, but takes its origin in the *solid substance of the hepatic tissue*, as a natural ingredient of its organic texture. The blood which may be pressed out from a liver recently extracted from the body, it is true, contains sugar; but this sugar it has absorbed from the tissues of the organ in which it circulates. This is demonstrated by the singular fact that the fresh liver of a recently killed animal, though it may be entirely drained of blood and of the sugar which it contained at the moment of death, will still continue for a certain time to produce a saccharine substance. If such a liver be injected with water by the portal vein, and all the blood contained in its vessels washed out by the stream, the water which escapes by the hepatic vein, will still be found to contain sugar. M. Bernard has found that if all sugar contained in a fresh liver be extracted in this manner, by a prolonged watery injection, so that neither the water which escapes by the hepatic vein, nor the substance of the liver itself, contain any further traces of sugar, and if the organ be then laid aside for twenty-four hours, both the tissue of the liver and the fluid which exudes from it, will be found at the end of that time to have again become highly saccharine. The sugar, therefore, is evidently not produced in the blood circulating through the liver, but in the substance of the organ itself. Once having originated in the hepatic tissue, it is absorbed thence by the blood, and transported by the circulation, as we shall hereafter show, to other parts of the body.
>
> "The sugar which thus originates in the tissue of the liver, is produced by a mutual decomposition and transformation of various other ingredients of the hepatic substance; these chemical changes being a part of the nutritive processes by which the tissue of the organ is constantly sustained and nourished." (p. 168.)
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> "The sugar produced in the liver is accordingly to be regarded as a true secretion, formed by the glandular tissue of the organ, by a similar process to that of other glandular secretions. It differs from the latter, not in the manner of its production, but only in the mode of its discharge. For while the biliary matters produced in the liver are absorbed by the hepatic ducts and conducted downward to the gall-bladder and the intestine, the sugar is absorbed by the blood-vessels of the organ and carried upward, by the hepatic veins, toward the heart and the general circulation." (p. 171.)

Chapter X. is upon the Spleen, of which the sum total of our knowledge concerning its offices remains an unknown quantity. We know that it can be removed in many of the lower animals without producing any very serious permanent injury, and that certain very curious effects follow its extirpation. The most constant result is increase of appetite. Enormous quantities of food are swallowed with great avidity, and are well digested. A cat after its spleen had been cut out, increased in weight six pounds in a little less than two months. Another consequence is, an unnatural ferocity of disposition. Beyond these *facts* we have the surmises of physiology, that the spleen is a larger lymphatic gland. One thing is certain in this connection—the blood is changed by its passage through the organ. How or by what means is not so clear.

> "The precise alteration, however, which is effected in the blood during its passage through the splenic tissue, has not yet been discovered. Various hypotheses have been advanced from time to time, as to the processes which go on in this organ; many of them vague and indefinite in character, and some of them directly contradictory of each other. None, however, have yet been offered which are entirely satisfactory in themselves, or which rest on sufficiently reliable evidence." (pp. 175–6.)

We pass over the chapters upon the Blood, Respiration, and Animal Heat, and can only allude to one topic in the chapter on the Circulation, viz, the Movements of the Heart. Here we are glad to find that Professor Dalton, rejecting the usual stereotype descriptions, has by his own explorations arrived at what we have long held to be the true solution of this vexed question. He arrives at conclusions opposed to those of Dr. Bellingham O'Brien and other British physiologists, and in agreement with those published by Dr. C. W. Pennock and Professor E. M. Moore (now Professor of Surgery in Buffalo University), as long ago as 1839. The celebrated William Harvey seems to have entertained the same view. "The heart," says he, "is erected and rises upward to a point, so that at this time (the contraction of the ventricles) it strikes against the breast, and the pulse is felt externally."

Speaking of the experiments of Drs. Pennock and Moore, our author says:

> "These experimenters operated upon calves, sheep, and horses, by stunning the animal with a blow upon the head, opening the chest, and keeping up artificial respiration. They observed an elongation of the ventricle at the time of contraction, and were even able to measure its extent by applying a shoemaker's rule to the heart while in active motion. We are able to corroborate entirely the statement of these observers by the result of our own experiments on dogs, rabbits, frogs, etc. The ventricular contraction is an active movement, the relaxation entirely a passive one. When contraction occurs and a stream of blood is thrown out of the ventricle, its sides approximate each other, and its point elongates: so that the transverse diameter of the heart is diminished and its longitudinal diameter increased. This can be readily felt by grasping the base of the heart and the origin of the large vessels gently between the first and middle fingers, and allowing the end of the thumb of the same hand to rest lightly upon its apex. With every contraction the thumb is sensibly lifted and separated from the fingers, by a somewhat forcible elevation of the point of the heart.
>
> "The same thing can be seen, and even measured by the eye, in the following manner: If the heart of the frog or even of any small warm-blooded animal, as the rabbit, be rapidly removed from the chest, it will continue to beat for some minutes afterward; and when the rhythmical pulsations have finally ceased, contractions can still be readily excited by touching the heart with the point of a steel needle. If the heart be now held by its base between the thumb and finger, with its point directed upward, it will be seen to have a pyramidal or conical form, representing very nearly in its outline an equilateral triangle; its base, while in a condition of rest, bulging out laterally, while the apex is comparatively obtuse.
>
> "When the heart, held in this position, is touched with the point of a needle, it starts up, becomes instantly narrower and longer, its sides approximating and its point rising to an acute angle. This contraction is immediately followed by a relaxation; the point of the heart sinks down, and its sides again bulge outward." (pp. 240–41.)

Our space will not admit of our following our author in his subsequent chapters on Nutrition, although subjects as important as secretion and excretion will thus receive no notice at our hands. The reader will be repaid by an attentive perusal of these pages devoted to these topics. The results of microscopic investigation, with which Professor Dalton is evidently a proficient, and of physiological chemistry, are embodied in his remarks.

The subject of Section Second, the Nervous System, is too important to be summarily disposed of, in the remaining space at our disposal. We must linger a moment to show our author's experiments and opinions with reference to the functions of the hemispheres of the cerebrum.

"The hemispheres, furthermore, are not the seat of sensation or volition, nor are they immediately essential to the continuance of life. In quadrupeds, the complete removal of the hemispheres is attended with so much hemorrhage that the operation is generally fatal from this cause within a few minutes. In birds, however, it may be performed without any immediate danger to life. Longet has removed the hemispheres in pigeons and fowls, and has kept these animals afterward for several days, with most of the organic functions unimpaired. We have frequently performed the same experiment upon pigeons, with a similarly favorable result.

"The effect of this mutilation is simply to plunge the animal into a state of profound stupor, in which he is almost entirely inattentive to surrounding objects. The bird remains sitting motionless upon his perch, or standing upon the ground, with the eyes closed, and the head sunk between the shoulders. The plumage is smooth and glossy, but is uniformly expanded, by a kind of erection of the feathers, so that the body appears somewhat puffed out, and larger than natural. Occasionally the bird opens his eyes with a vacant stare, stretches his neck, perhaps shakes his bill once or twice, or smooths down the feathers upon his shoulders, and then relapses into his former apathetic condition. This state of immobility, however, is not accompanied by the loss of sight, of hearing, or of ordinary sensibility. All these functions remain, as well as that of voluntary motion. If a pistol be discharged behind the back of the animal, he at once opens his eyes, moves his head half round, and gives evident signs of having heard the report; but he immediately becomes quiet again, and pays no farther attention to it. Sight is also retained, since the bird will sometimes fix its eye on a particular object, and watch it for several seconds together. Longet has even found that by moving a lighted candle before the animal's eyes in a dark place, the head of the bird will often follow the movements of the candle from side to side, or in a circle, showing that the impression of light is actually received by the sensorium. Ordinary sensation also remains, after removal of the hemispheres, together with voluntary motion. If the foot be pinched with a pair of forceps, the bird becomes partially aroused, moves uneasily once or twice from side to side, and is evidently annoyed at the irritation.

"The animal is still capable, therefore, after removal of the hemispheres, of receiving sensations from external objects. But these sensations appear to make upon him no lasting impression. He is incapable of connecting with his perceptions any distinct succession of ideas. He hears, for example, the report of a pistol, but he is not alarmed by it; for the sound, though distinctly enough perceived, does not suggest any idea of danger or injury. There is, accordingly, no power of forming mental associations, nor of perceiving the relation between external objects. The memory, more particularly, is altogether destroyed, and the recollection of sensations is not retained from one moment to another. The limbs and muscles are still under the control of the will; but the will itself is inactive, because apparently it lacks its usual mental stimulus and direction. The powers which have been lost, therefore, by destruction of the cerebral hemispheres, are altogether of a mental or intellectual character, that is, the power of comparing with each other different ideas, and of perceiving the proper relation between them.

"The same result is well known to follow, in the human subject, from injury or disease of these parts. A disturbance of the mental powers has long been recognized as the ordinary consequence of lesions of the brain. In cases of impending apoplexy, for example, or of softening of the cerebral substance, among the earliest and most constant phenomena is a loss or impairment of the memory. The patient forgets the names of particular objects or of particular persons; or he is unable to calculate numbers with his usual facility. His mental derangement is often shown in the undue estimate which he forms of passing events. He is no longer able to appreciate the true relation between different objects and different phenomena. Thus, he will show an exaggerated degree of solicitude about a trivial occurrence, and will pay no attention to other matters of real importance. As the difficulty increases, he becomes careless of the directions and advice of his attendants, and must be watched and managed like a child or an imbecile. After a certain period, he no longer appreciates the lapse of time, and even loses the distinction between day and night. Finally, when the injury to the hemispheres is complete, the senses may still remain active and impressible, while the patient is completely deprived of intelligence, memory, and judgment." (pp. 361—363.)

Contrast with this the effects of a similar mutilation of the cerebellum:

"Physiologists, however, have thus far failed to demonstrate the nature of its function, with the same degree of precision as that of many other parts of the brain. The opinion of Gall, which located in the cerebellum the sexual impulse and instincts, is at the present day generally abandoned, for the reason that it has not been found to be sufficiently supported by anatomical and experimental facts, many of which are indeed directly opposed to it. The opinion which has of late years been received with most favor, is that first advocated by Flourens, which attributes to the cerebellum the power of associating or "coordinating" the different voluntary movements." (p. 370.)

"If the cerebellum be exposed in a living pigeon, and a portion of its substance removed, the animal exhibits at once a peculiar uncertainty in his gait, and in the movement of his wings. If the injury be more extensive, he loses altogether the power of flight, and can walk, or even stand, only with great difficulty. This is not owing to any actual paralysis, for the movements of the limbs are exceedingly rapid and energetic; but it is due to a peculiar want of control over the muscular contractions, precisely similar to that which is seen in a man in a state of intoxication. The movements of the legs and wings, though forcible and rapid, are confused and blundering, so that the animal cannot direct his steps to any particular spot, nor support himself in the air by flight. He reels and tumbles, but can neither walk nor fly.

"The senses and intelligence at the same time are unimpaired. It is extremely curious, as first remarked by Longet, to compare the different phenomena produced by removal of the cerebrum and by that of the cerebellum. If we do these operations upon two different pigeons, and place the animals side by side, it will be seen that the first pigeon, from whom the cerebrum only has been removed, remains standing firmly upon his feet, in a condition of complete repose; and that when aroused and compelled to stir, he moves sluggishly and unwillingly, but acts otherwise in a perfectly natural manner. The second pigeon, on the other hand, from whom the cerebellum only has been taken away, is in a constant state of agitation. He is easily terrified, and endeavors, frequently with violent struggles, to escape the notice of those who are watching him; but his movements are sprawling and unnatural, and are evidently no longer under the effectual control of the will. If the entire cerebellum be destroyed, the animal is no longer capable of assuming or retaining any natural posture. His legs and wings are almost constantly agitated with ineffectual struggles, which are evidently voluntary in character, but are at the same time altogether irregular and confused. Death generally takes place after this operation within twenty-four hours.

"The results of the above experiment are extremely constant and invariable, and by themselves would lead us to adopt, with a good degree of confidence, the opinion of Flourens. This opinion evidently has more direct evidence in its favor than any other theory, which has yet been broached with regard to the function of the cerebellum." (pp. 371-72.)

After adducing instances derived from comparative anatomy to support the same view, he impartially sums up:

"In the above instances, therefore, an evident correspondence exists between the size of the cerebellum and the variety of movement, of which the animal is capable. Still, this part of the subject has not yet been sufficiently investigated to enable us to say that such a correspondence exists in all cases. Morbid alterations of the cerebellum, furthermore, such as inflammations, abscess, tumors, etc., have not always been found to produce, in the human subject, symptoms connected with a loss of harmony in the voluntary movements. The complete function of the cerebellum, accordingly, cannot yet be regarded as positively ascertained; but so far as we may rely on the results of direct experiment, and on the general facts of comparative anatomy, the most plausible opinion is that of Flourens, viz, that the cerebellum possesses the power of uniting and harmonizing the action of separate muscles, so that they may assist each other in the production of varied and complicated movements." (p. 373.)

The third section of the book, devoted to Reproduction, is exceedingly copious and valuable. This subject is evidently our author's specialty, as we might expect when we call to mind the success of his early, if not earliest, extended effort on the Ovum, to which the prize of the American Medical Association was awarded in 1852. Among other matters of less practical importance to the physician, the reader will find a concise, but comprehensive account of periodical ovulation and its connection with menstruation, and also a chapter "*on the corpus luteum of menstruation and pregnancy*," one of the most thorough and clear accounts of these phenomena to be found in our language. In this connection let us do an act of justice to a very worthy physician of our State. The ovular theory of menstruation was maintained by Chruikshank, who observed that a Graafian vesicle became enlarged, ruptured, and discharged its egg, as long ago as 1797; but the theory and the facts upon which it was founded, made slow progress in the opinions of the profession. Here and there, a keen observer recognized its importance; but it was long before it was universally acknowledged. In 1816, Dr. Strong, of Centreville in this State, in an essay on the subject, fully set forth the connection of ovulation with menstruation, and supported it by ingenious observations. We are not aware of any work of so early a date, where the question was so satisfactorily discussed, and therefore have a pleasure in doing so tardy an act of justice to an honorable, but retiring member of our own body.

We are sensible that we have not done adequate justice to Dr. Dalton's work which, we repeat, is an honor to our nation, and a welcome addition to our means of physiological research. In a literary point of view, the extracts we have given, will have shown the reader that the work possesses great merits. Concise, yet perspicuous; ample in its details, yet never tedious; the style of the composition is clear and simple, remarkably so, indeed, for a work of scientific character. Another pleasing feature of the book remains to be noticed. It is illustrated by two hundred and fifty-four engravings, "all of which have been prepared from original drawings, with the exception of eleven credited to their authorities." They are all exceedingly well done, and many of them are of great beauty. It is so rare to open a book on any department of medicine, which professes to be illustrated, without greeting numerous old friends in the shape of engravings which, like children's clothes in economical households, have descended from one generation to another with some minor alterations, perhaps, but with a gradual deterioration from wear and tear, that the employment of original drawings in this case is especially a matter of congratulation. We need only add that in the publication of the book, the publishers have done their part well.

STILLE ON THERAPEUTICS.

Therapeutics and Materia Medica, a Systematic Treatise on the Action and Uses of Medicinal Agents, including their Description and History. By ALFRED STILLE, M.D. Phila.: Blanchard & Lea. (2 vols., pp. 975.)

WE have before us Dr. Stille's book, and a very fair book it is to look upon, but of alarming proportions. One's thirst for knowledge is almost quenched by the mere thought of undertaking to read so much matter. We cannot, however, in turning over its pages, fail to discover that the author's labor has been prodigious, and that his courage was great in planning and writing a book on Materia Medica, the most difficult and unsatisfactory department of medicine, from the vast amount and diversity of material and the uncertainty of what is known concerning the action of many medicines, and of the therapeutic processes. So we can but admire his spirit, and ought not to be afraid to follow him and see what he has accomplished.

He tells us, in the first paragraph of his preface, that his book is "intended for those who desire to learn the surest method of curing disease," and for this reason "it has seemed not only allowable, but imperative that in the form of the work, scientific unity and precision should be subordinated to practical utility." In the first part of this sentence he takes a bold stand, but no fault should be found with him, because a man must feel sure of the excellence of his work when he thus announces it. With regard to the remaining portion we agree with him, inasmuch as he says in the sentence succeeding that "it would have been unpardonable to leave out of sight those fragments of scientific knowledge, which may one day serve to bridge the chasm between theory and practice, and convert the precepts of therapeutics into laws." In almost all works on Materia Medica, this order is reversed, "scientific unity and precision," and the pet theories of authors and schools are allowed to overshadow facts of practical value. It seems hitherto to have been a fixed rule with authors to do this thing, and we are obliged to wade through an immense body of learned stuff to get at the little island which we covet.

We do not undervalue the precision of science nor the usefulness of theory, but we think that neither should be allowed to encumber us unnecessarily in our search for knowledge, especially in therapeutics, wherein so much remains to be studied and proved, where our author says he has fixed the point of view in this treatise "at the bedside of the sick rather than in the laboratory or the lecture-room." We agree with him in thinking that it is better to leave "the details as to the chemical and physical relations of medicines to the medical classics, and attend mainly to their physiological relations. We have long thought that chemistry, botany, mineralogy, pharmacy, etc., ought to be separated as nearly as possible from therapeutics, and we are glad to find one occupying so high a position as Dr. Stille advocating it. Let the "classics" be well studied in the first place, and we shall be well prepared to take up that which gives to medicines their importance, their influence upon the body.

The first observation which Dr. Stille makes concerning the physiological relation of medicines, contains, as we think, the pith of all therapeutic knowledge, namely, "that the action of medicines upon the sound organism of man and the lower animals forms the key to their curative operation in disease; the more thoroughly it is known, the more intelligible must the mode become, in which medicines bring about the restoration of soundness of structure and function, and the more will the isolated facts of therapeutics tend to arrange themselves in a systematic form." In this he agrees with the majority of modern writers, and it is the only mode by which the science will ever be redeemed from its present chaotic condition.

Dr. Stille's assertion that "our knowledge of the usefulness of medicines rests altogether upon experience, but not upon that of any one man, however skillful, nor of any age, however enlightened," is just, and we think there is no shame in the confession, as all the other sciences have been formed precisely in the same manner, and if medicine is less perfect than some other sciences, it is only because it is more extensive and more difficult; and we it may be as exact as its kindred. But while we acknowl- are not without the hope that, before a very distant period, edge all that we owe to experience, we are not willing altogether to forego reasoning and making deductions. It may lead, as our author says, to nothing more than "tickling vanity" or "pleasing fancy," but it has often led to important discoveries the value of which is as great as that of those bestowed upon us by blind experience. If we mistake not, it was by reasoning a little in the first place and experimenting afterward, that Jenner discovered Vaccination. Let us have the results of experience and treasure them, but let us have also the privilege of reasoning and making theories.

What our author says concerning General Therapeutics is plainly stated, and divested of much useless detail concerning experiments, etc. In speaking of the causes which modify the virtues of medicines, he says "it is, perhaps, hardly less unwise to expect identical effects from a vegetable alkaloid and from the plant which yields it, than it was at one time to employ gelatine for food, as the representative of meat," and that "it will probably be found hereafter, that the proper representative of a natural drug is a combination, in their due proportion, of all its active constituents." We presume there are few who will dispute this assertion. Its truth is urged upon us every day. Tannic acid, in its several forms, does not represent the substances from which it is derived, neither does morphia, as our author says, fully represent opium, nor quinia the cinchona barks, and for this reason it is frequently best to put the active principles aside, and use the crude drugs; but we presume Dr. Stille will not deny the efficacy of the "active principles," nor the many advantages which we gain in using them.

At page 39 the folly of attempting to make fact in medicine, correspond with men's ideas of what they wish it to be, and of completing it as a science by one effort, is well shown. He says, after mentioning the long continuance of the Galenical system, and the release of medicine from that system, and the subsequent rise of Paracelsus, Stahl, Brown, Hahnemann, etc., with their systems of therapeutics, that "the advance of medicine has scarcely been retarded, for it has in the main adhered to observation, as the direct road to scientific truth," and "that therapeutics in this respect differs in no wise from the other natural sciences which one of the greatest living philosophers declares to be 'founded upon a rational empiricism, that is to say upon the totality of facts recorded by science, and subjected to the mental processes of comparison and combination.' The same writer tells us that the first step of the empirical process is to collect individual facts, arranging them according to their likeness or unlikeness, and then add to these facts by experiment, by means of which we are enabled to study phenomena under different and determinate conditions, and thus ultimately arrive at empirical laws. Such laws form the '*principles* of therapeutics.' They rest upon a wider basis of experience than it is possible for any individual to possess, and in no respect do they differ from the conclusions drawn by a single mind from direct and personal observation.

"But there is another and very objectionable sense in which the phrase 'principles of therapeutics' is sometimes used. It is applied to propositions evolved by the application of hypothetical laws of the action of medicines to equally hypothetical pathological conditions. But since the changes which a medicine produces in the organism are so imperfectly known, it may be said, respecting those substances which most certainly cure disease, that we are ignorant of their action, even in the healthy body. On the other hand, we know little or nothing of what constitutes disease; that which we do know consisting of physical changes in the body, which are, indeed, the effects of disease, but not disease itself. How, then, we repeat, is it possible to deduce principles of therapeutics from a comparison of the action of medicines, of which we know little, with the intimate morbid actions of the system of which we know still less? Yet upon such an unsubstantial foundation have been built all of the so-called systems of medicine which have been named above (those of Paracelsus, Brown, Hahnemann, etc.), and which have uniformly failed of success whenever they were brought to the test of experience in the hands of men who had no passions to gratify and no foregone conclusions to sustain." Medicine has not been retarded, nor can it ever be retarded by "systems" and "finishers," while the majority of true men retain their intelligence and love for what is right. Those who follow and feel glad in the possesion of "systems," are only such as faint by the way in all great undertakings, or whose minds are too feeble to cope with great subjects, or such as look for gain for its own sake, careless of the means by which it is obtained ; such are not likely to do a great deal of harm. Like the systems which they follow, they pass away, and their place is not known any more, while true medicine stands shining more than ever before.

At page 57, in his remarks on the Local Action of Medicines, our author gives us a new term, if not a new idea·

He speaks of the "power of penetration" possessed by certain medicines. And he says of it: "This is not identical with their absorption, but it is the power which medicines have of producing their effects, often energetically upon neighboring, but not functionally related parts." What is this power of penetration? Do medicines acting in the manner just named penetrate the tissues by some purely physical process, passing through one to another, and affecting each according to its peculiar sensibilities? Do they act by what is called sympathy by some writers, that is, by nervous transmission; or are they absorbed by the agents usually conceived in the process of absorption, and taken to the seat of their action? We are inclined to agree with Dr. Stille that they penetrate, but when we have said that, we have said all that we know. We have seen some very ingenious speculations upon the mode in which belladonna causes dilatation of the pupil when applied to the brow, the severe stranguary produced by cantharides when applied to the loins, etc., but none of them are satisfactory, and we are forced to call this power of medicines the power of penetration, or continuous sympathy, a name which John Hunter gave to a nearly similar phenomenon which he observed in certain diseases.

Did not Dr. Stille give us, in his chapter on the Remote Action of Medicines, page 59, what he considers an explanation of this interesting subject, we should consider him in the same category in which we have placed ourself. He says, in considering the transmission of medicinal influences by nervous agency, "other impressions are occasioned by the local action of medicines upon the nervous trunks, or extremities, without the intervention of the circulation, as in the *penetration* noticed above." He then goes on to notice the relief from local pain, frequently obtained by the application of opium, aconite, veratria, belladonna, etc., and the fact, that "a frog's foot kept moist with laudanum or prussic acid, loses its power of motion without the general sensibility having been impaired." This we suppose to be the true explanation, yet it is not quite satisfactory, particularly with regard to the action of belladonna on the eye. In the chapter on Absorption there is nothing new, but the illustrations are well and forcibily drawn, and we are glad to see that a large number of modern authorities are quoted, while the older, so hackneyed, are given only a due degree of prominence. We quote a sentence, and wonder with the author: "As soon as it was known that the body grows by the absorption of food, it seems incredible that there should have been any doubt that medicines are taken in like manner into the system, and more especially that there should have been any after the discovery of the circulation of the blood." It is not more incredible than the fact that the circulation of the blood remained so long undiscovered; but still it is a strange fact.

Another observation in the same chapter (page 72) is worthy of remembrance, it is that "at the two extremes of life, the function of absorption displays opposite degrees of activity; it is excessive in infancy, and deficient in old age." Although this fact is familiar, it is not always remembered in prescriptions for children, and many account for the greater susceptibility to medicinal influences in infancy by the "impressibility" of the nervous systems, leaving the activity of absorption out of view.

The section on the Avenues by which Medicines are Introduced, is better than any thing we have ever read on this interesting topic. We wish more had been ascertained concerning the Changes which Medicines Undergo after Absorption, for we are convinced that a knowledge of them will elucidate a great deal which at present is conjectural. But little, however, is known, and as Dr. Stille says, it would "be unwise to adopt them implicitly as guides in practice." In the chapter on the Curative Action of Medicines, the distinction between their primary and secondary operation is thus set forth. "Sometimes the one and sometimes the other is curative. All medicinal stimulants are useful by their primary operation alone, and, indeed, the depression which ensues tends to impair the advantages of the original impression. Primary sedatives seldom exert a secondary stimulant operation; indeed, cold is the only one that has this effect, and not then unless it is applied in a certain degree. The terms in question are, however, frequently used to indicate a difference in the kind as well as in the degree of action. Vegetable tonics, for example, act as stimulants to the stomach, and this is their primary action; but as a consequence of it, the function of digestion is more thoroughly performed, and the nutrition of the body is improved. The latter constitutes the secondary operation. Purgatives and emetics irritate the bowels, and occasion diarrhœa or vomiting; this is their primary operation, but they may at the same time relieve congestion of the brain or lungs, and thus exert a secondary and curative influence."

In this same chapter the author, after quoting Boyle's definitions, thus disposes of the doctrine of specifics: "Modern investigations have not discovered that sort of specific which Boyle never met with, but there are several which do exert 'a curative virtue without the existence of a known quality' to explain their cures. These are mercury, cinchona, iodine, and colchicum, which, in syphilis, ague, goitre, and gout, respectively, are capable of curing without the intervention of any evident modification, either of function or of structure. But as these effects are not absolute, as there are many cases of every disease mentioned, which are rebellious to the corresponding remedy, we are forced to suspect that even these medicines are not specifics in the sense of Boyle's second definition. At the same time, as we are wholly and absolutely ignorant of their mode of cure, and almost or quite as ignorant of the nature of the diseases to which they are antidotes, it is not impossible that in the progress of discovery the now unknown elements may be disclosed, and that we shall find these medicines illustrating some of the laws under which remedies in general operate. The third definition of Boyle is one which cannot be accepted unless it be in a popular rather than a scientific sense. To say that opium is a specific for bilious colic, or cholera morbus, or that alcohol is a specific for delirium tremens, merely signifies that, generally, these medicines are curative of the diseases named, but by no means constantly, as in the case of the true specifics, and also that they cure by virtue of properties which they manifest under all the circumstances in which they are employed. They fall under a general therapeutic law; whereas the curative operation of every one of the specifics mentioned has no evident relation to the effects which it produces upon healthy structure or function." That is to say, there is no such thing as an undoubted specific known in medicine.

There are also some very curious facts in regard to what is known as the "elective action" of certain medicines—showing that they act by preference on particular organs. Belladonna and hyoscyamus act as debilitants to the nerves of the eyes, while opium and pulsatilla stimlate them. Iodine acts by preference upon the thyroid gland, etc. We are glad of a good chapter on the Art of Prescribing, a branch of knowledge in medicine too much neglected, especially by American physicians. Most of us need Dr. Stille's chapter, and more knowledge of Paris's work than we possess.

Dr. Stille finds the usual difficulty in making a classification of medicines, but gives a very good one, notwithstanding. "Any order of treating them is better than none," but that arrangement is best which gives to the student some insight into their physiological influence on the body, while it does not confuse by a multiplicity of classes and subdivisions. Such a one is here offered us. The classes are comparatively few, and the distinctions between them sufficiently well drawn. We prefer Dr. Stille's to Headland's classification, which has been so much praised, because the first is based upon effects which can be plainly and easily recognized, and not upon such as are yet to a considerable extent problematical. Neither has it that attempt at finish and precision, not justified by the present state of therapeutic science, which in some degree characterize the other. We have not space to follow our author further. We reserve this privilege for a future number. We have gone far enough to show that we think his book a good one. He adheres rigidly to his declaration of "presenting the truth," for, throughout, more than in any work of the kind we have ever seen, the author's own peculiar notions are made secondary to what he conceives to have been demonstrated by the experience of the many. We think he is too much inclined to rely upon experience to the exclusion of other means for the acquisition of knowledge in therapeutics; but there are many others who neglect experience, and are more apt to mislead us by paying too much attention to chemistry, physiology, pathology, etc. These, as Dr. Stille tells us, are uncertain guides in the treatment of disease, and will cruelly disappoint us if we trust them too far—but no one ought to deny that therapeutics owes a great deal to these kindred branches, and that by the assistance to be derived from them a great deal which now is obscure may be rendered intelligible. But we must not let them "dictate what remedies shall be applied."

Dr. Stille warns us that he is not sceptical concerning the good effects of medicines in disease. He is not so. He gives credit for all that is due, but he strips the coverings from the image of Therapeutics, so long worshipped, and presents it to us in a state of nudity which is a little alarming to behold. The book is valuable, and we think any one will be profited (we undoubtedly have been) by its perusal. The style is good, and the author expresses his ideas clearly and forcibly. We notice (to us) a few new words, such as "meno-pause," "Suspirious," which we are rather glad to see, for we are tired of many of the old terms used in our books.

In another paper we purpose examining what our author has to say concerning some of the more important medicines—for example, opium, chloroform, and "a few specifics," as quinia, etc., which, even according to Dr. Holmes's testimony, are valuable, and ought not to be thrown into the sea for the delectation of fishes. The task will be pleasant to us.

PART II.—ESSAYS AND CORRESPONDENCE.

ON THE CAUSES OF INSANITY.

BY RICHARD GUNDRY, M.D., DAYTON.

THERE are two modes of presenting the subject of Insanity for consideration, two stand-points from which it may be viewed, and by which, as we adopt the one or the other position, our impressions concerning it may be modified. The more general view of insanity taught almost exclusively (whenever insanity forms the subject of medical teaching) presents its relations to jurisprudence and legislation. How far does its existence modify human action and liability for the usual consequences of actions, and conversely, how far does a certain action or series of actions indicate unsoundness of mind in the individual whose conduct is investigated? These are the propositions most frequently discussed, and belong alike to the jurist and the physician. The influence of insanity in controlling thought and actions, its insidious traces in conduct where it had been least suspected, its gradual progress from those delicate tints (if I may so compare differences of character) to the lurid light of raving madness, or the sombre gloom of mental darkness; these have been studied not only by medical men, but (and perhaps more deeply) by jurists who have framed legal dicta upon the result of such observations; and as correctly in the main, and far more vividly portrayed by those keen observers of man and nature, the great poets and novelists, who faithfully hold "the mirror up to nature." Homer and Shakspeare, Sophocles and Webster, have daguerreotyped many of the phases of human madness so inimitably as to be recognized in all ages as faithful portraits, whatever may be the prevalent ideas of the causes and history of the disease in different periods. And among novelists, how exquisitely have Cervantes and Scott and Richardson interwoven in their bright pictures of human actions, the more sombre shades of mental weakness and affliction!

But there is another, and to physicians equally as important a side of the picture to be examined. What are the relations of insanity to the general science of medicine? What influence does the existence of insanity exert upon the various processes of the body? What conditions, on the other hand, give rise to or co-exist with this morbid state of the mind? What are the signs and symptoms of this diseased action, and to what extent are they capable of being influenced by external agencies, by remedies, etc.? The general causes that contribute to the existence of insanity, or to its spread, and those special agents which determine the attack at a certain time in a certain individual? Have we any evidence to show that any age, any condition of life, any class of circumstances, are more favorable than others to the production of insanity? These are some of the questions which it is important that physicians should pay special attention to, as more nearly concerning them personally than the nicer and more intricate inquiries as to the extent responsibility may be modified by the weakness or vagaries of the human mind; and these matters I propose to discuss in the present report. I shall assume that we have to deal simply with insanity as diseased action which we may be called upon to treat — to cure, if possible, or to palliate, if that only be within the resources of our art. In this plan I shall regard the insane as patients to be prescribed for, of whose diseases we have to form a correct diagnosis as well of their origin as of their character, whose usual course of phenomena we must learn; the disturbing circumstances of which we must calculate, to estimate their force and endeavor to anticipate, and whose probable terminations it may be our

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duty to foresee; to assist in bringing about, or delay where we cannot prevent. These remarks, therefore, will be simply addressed to the *Medical Aspects of Insanity*, and will not in any way consider its juridical relations.

At the outset of our task, it may be well to state that in the general term of *Insanity* may be included, from a merely medical point of view, various mental conditions which would not be accepted as sufficient to absolve from crime nor to disqualify the individual from his legal privileges as a citizen, and which nevertheless often come under our hands for proper treatment. For insanity, in a medical point, whatever it may be in a juridical relation, is not a single disease — an entity, in the same way as small pox, typhoid fever, or pneumonia, which, however different some of their symptoms may be in different persons, have yet so many points of agreement wherever and under whatever circumstances they appear, as to preclude all difficulty of recognition, but may be regarded more strictly as a condition or series of phenomena occurring in the course of various diseases, or in consequence of various and even opposite pathological lesions — a condition the only bond of union in many cases of very oppositely marked and varied symptoms of the morbid changes going on. In a somewhat similar way "headache," no disease itself, and dependent upon no fixed and certain lesion, may indicate the existence of one or the other very opposite pathological conditions. The symptoms are real, easily identified and described, or even classified, but it is not always so easy to arrive at the exact cause that induced their presence, or the train of morbid phenomena which perpetuates their unpleasant sway. So mental unsoundness may arise from numerous exciting sources of disturbance, be continued by the progress of very different pathological changes, and be influenced by very various and contrary circumstances. It is not always given to us to guess what exact point of pathological departure mental aberration may indicate — this is evident — that may be unknown, or dimly, very dimly shadowed forth to our minds. We know something of several groups of phenomena which constitute that condition of a patient which is termed insanity, but beyond this — not itself too clear — we must grope our way over a path rugged at all times, here and there on well marked roads, but ever and again very uncertain in its direction and hard to trace. *What, then, is insanity?* Who can give its definition?

> — "For to define true madness" —
> What is 't? But to be nothing else but mad.—*Shakspeare.*

For our present purpose, it will be sufficient to regard insanity as *that condition of mind wherein, from disease, there is a deviation in the intellectual, moral or instinctive faculties from the sound and healthy standard of that individual.* I know it will not be difficult to pick a flaw in this definition of insanity, but I simply present it as a postulate to start with in the following remarks. There are two essential features which must be introduced in every attempt to define insanity:

1. Manifest alteration in conduct or thought, *must be the result of disease.*

2. That unsoundness of mind is to be judged by a comparison of the mind in ordinary health of the individual affected, not by any standard external to him.

Failing to embrace these two propositions, all descriptions omit the most characteristic and essential features of the disease. Without regard to them, we may more easily establish a standard of comparison in our own minds, to which, like the bed of Procrustes, every opinion and action must exactly square or be condemned. Wherein they agree with us, they are right and sane by this method; whatever differs from us, must be wrong and unsound. Or, neglecting both propositions, we may assume every departure from the absolute "true and right" as insanity, and conclude with the old rhyme:

"All men are mad,
In spite of all finesse;
The only difference doth consist
In being more or less"—

an opinion which entailed upon Dr. Haslam no small share of obloquy and ridicule. We may always avoid these errors, if we recognize the distinction that the unsound phenomena must be the consequence of diseased action, and is to be estimated by a comparison of the mental and moral manifestations of the individual before the supposed invasion of the disease. After all, when we review the numerous attempts to define insanity by men of unquestioned ability and largest experience, we cannot but coincide, in the opinion so tersely expressed by Dr. Burrows, that "a definition suitable to every form of insanity is an *ignis fatuus* in medical philosophy which all follow and which eludes and bewilders pursuit."

It seems to be conceded by all parties that mental disease is gradually increasing, not only because the number of the insane is absolutely greater than formerly, as might be expected, but also because this number bears a much higher proportion to the general population than during any previous age, and to a certain extent varies in different countries and localities correspondingly with the state of civilization which prevails therein. An estimate of this proportion, calculated on data derived from various sources, though doubtless not free from error, will illustrate this subject sufficiently for our purpose. It is assumed that the proportion of the insane to the general population, is in

In France	1 in 795	Florence	1 in 338
Norway	1 in 551	Turin	1 in 344
Rhenish Provinces	1 in 666	Rome	1 in 481
England and Wales	1 in 300	Dresden	1 in 466
Scotland	1 in 390	Naples	1 in 759
Massachusetts	1 in 302	St. Petersburg	1 in 3,142
London	1 in 200	Madrid	1 in 3,350
Paris	1 in 222	Cairo	1 in 23,571
Milan	1 in 242		

With ample allowance for any errors in the formation of some of the above statements, it is sufficiently clear that in "the principal seats of civilization, mental disease is most rife; and a comparison of these figures with the estimates of statisticians twenty years ago, will show that the relative increase has followed the same law. It is admitted that a part of this increase is more apparent than real, and can be accounted for by the supposition that the cases which exist are more readily known and collected for comparison, and that various mental conditions which at the least were considered to possess doubtful claims to be classified under this name, are now recognized under the general term of insanity. Making due allowance on these accounts, there yet remains a large and yearly increasing balance, which in general terms is charged upon the progress of civilization. The term is very vague, and we cannot stay to define it exactly, were a definition even possible. Few persons can frame a formula to describe what they regard as the essentials of beauty; but fewer still who do not instinctively recognize its influence and presence. Civilization stands in a somewhat similar position, difficult to describe, yet each mind projects an ideal standard by which to measure the condition of communities or of individuals, with reference to the extent of the civilization they exhibit. For our purpose it is sufficient to remember that civilization includes the diffusion of knowledge, the constant increase of industrial pursuits, and of individual and personal comforts among the people; that it is necessarily a state of transition towards the "supposed condition of happiness and well-being of the community or individual"—a state always imperfect, and the more advanced it becomes, the more it comes into contact with the darkness and misery it aims to destroy. It compels, therefore, to incessant exertions, as it urges all within its power onward in the race of life, by bringing within the *apparent* reach of all the prizes they so much covet. Wealth, distinction, ease and luxury, are the sirens which ever beckon the tempest-tossed mariner, and these become year by year less attainable by mere deeds of prowess ; by animal courage or personal strength — the chief elements of success in all primitive eras. Mere manual toil is replaced by the labor-saving machine. The *brain labor* is substituted to a great extent for mere manual dexterity and toil. But the wants of man have increased equally with his ability to invent the means of supply, and it necessarily happens that to the individual they may have become imperious, while circumstances keep him from the source of supply. This arises, of course, from the imperfections of all our civilization, which gives rise to several classes of persons comparatively unknown in the more simple ages of a people. One which bears a fixed relation to society at large, comprises those who, with more actual comforts than could ever have been acquired by them, or the class they seem most to resemble in previous generations, have wants and impulses and aspirations implanted in them by the spirit and circumstances of their own days which they are powerless to satisfy. Harassing mental toil, keen sensitiveness and bitter disappointments, form their daily lot. Then, there are those who, solely by the efforts of others, have been placed in such circumstances that their wants are readily supplied without any of that stimulus to exertion which must exist were their comforts to depend upon the results of their own efforts. The tendency in these is to concentration upon their personal tastes all their time and money ; to neglect that efficient bodily and mental labor without which nature cannot long be kept in good working order ; to forget the dependent condition of every individual to society at large, and to ignore the duties it claims at their own hands — a neglect sooner or later revenged upon them. Their physical and moral natures are never fully developed, unless a storm sweeps over their path and clears away the mephitic atmosphere which surrounds them, leaving them, it may be, with some severe scars, but stronger and healthier for the struggle, or it finds them too weakly for the trial, and utterly prostrates and overwhelms them in its fury. To these we may add, as another product of civilization, that body of active minds constantly at work to supply the demands created by the age for the results of mental toil, whether it be for new machinery to economize labor, devices to increase the influence of capital, or the development of principles to guide mankind in their intellectual, moral or political relations. Their position, as it were, at the helm of society exposes them to peculiar and manifold evils. This class is constantly increasing. Both the good and evil incident to their condition, also increase alike. These three classes comprise a large and daily becoming larger portion of society, compared with the plodding and evenly balanced men, who calmly do their appointed work, and bide with unswerving courage and reliance their appointed time and destiny. Though they differ from each other in most of their characteristic qualities, the three agree in *one* striking peculiarity. In each the nervous forces have been developed at the expense of their other powers. It is a train ready laid and only awaits a very slight spark to bring on an explosion. This greater susceptibility to nervous impressions and liability to *hyperæsthesia*, is shown in the great increase in the community of liability to headaches — to dyspepsia — to hysteria, and especially in the *diminished power of resistance shown to physical depressing agents.* The Indian woman, about to become a mother, steps aside to the retirement afforded by a denser part of the forest through which she happens to journey, and soon rejoins her lord and his tribe with the new-born babe. Among the sturdy toiling classes in all countries, we find women inured to labor from infancy, knowing few luxuries and caring for less, to whom parturition is scarcely more troublesome. A day or two sees them again at their accustomed duties with unimpaired vigor. Yet to one of the second class I have pointed out, the shock experienced from even an easy labor, is usually grave and not unfrequently critical. Long and tedious convalescence—sometimes serious uterine derangements—more often vexatious hysterical affections, are encountered before recovery is complete. If, therefore, civilization adds to the knowledge and happiness of the general community where it is developed; if it also intensifies individual pleasure by elevating its sources — and who can doubt these propositions? — it also distills from the same alembic, to mix with these sweets, some subtle and pervading poisons for the torture of the individual.

> " — The individual withers and the world is more and more."

The same influences of civilization which thus assist the prevalence of those diseases which, like hysteria, neuralgia, epilepsy and others, depend upon the disturbance of the equilibrium of the nervous forces, or tend to diminish the powers of resistance to the encroachment of *all* disease, may undoubtedly play an important part in the production of insanity. And here I think it may be found that its influence is principally to be discerned in the feeble stand that the system makes to slight physical causes — so slight, oftentimes, that they are ignored in the attempt to search for the origin of the disorder in many cases, and a *post hoc propter hoc* argument is substituted, which ascribes the disease to some moral cause with which the patient has been brought into contact. It is stated by many authors that physical evils are the sole cause of insanity among the ruder nations, but they contend that among the more civilized peoples moral causes greatly predominate. I cannot avoid the reflection that too often the truth I have endeavored to point out has been overlooked in such statements; that it is equally as plausible and more consonant with sound pathology to admit that among the more primitive people and classes, the cause can usually be traced to palpable and well-marked physical evils; and that among the more refined or more civilized, apparently lesser and more obscure physical influences accomplish the same end—the only difference being in the power of resistance possessed by the two classes. This of course does not exclude from our consideration those powerful moral agents which sometimes appear to overthrow the mind without the apparent intervention of any phenomena of a purely physical nature. These, however, are more exceptional in their occurrence than it is generally believed; for it not unfrequently happens that in looking back upon the events which marked the commencement of insanity, circumstances rather coincident than casual attract attention to the prejudice of the slighter but more intimately related physical troubles then present. To this point I shall more fully allude when I come to consider the special exciting causes of insanity.

Moreover, in our estimate of the influence exerted by civilization, we must not forget that while it diminishes the power of resistance in the individual, it at the same time adds to the number of external circumstances which may operate upon him as agents of a depressing nature. At best, all civilization, so far as yet attained by humanity, is but a transition to something beyond for which we strive. The nearer we approach the goal, the more it seems to fade from our touch. As Italy seemed to Æneas and his companions to grow ever farther and farther from their reach the nearer they actually came to its shores, so from certain outlooks society may sometimes appear rather to be more degraded than elevated by the lapse of time. Comfort and riches may as a general rule have increased, and yet misery and crime prevail among certain classes in the same community more than in even savage countries. These are exempt from those alternations of prosperity and adversity which it introduces into society, and yet these very agents act upon more sensitive objects. This, properly speaking, may not be chargeable upon civilization, but only upon the imperfect forms it assumes in the advance to that true civilization which, when achieved, will heal all wounds and banish all sorrow. As Dr. Feuchtersleben remarks:

> "It is not civilization, but the increasing want which it brings in its train — partial education — passions — emotions, etc., all which set the mind in passive motion; the forced culture to which they lead; the over-indulgence; these contain the reasons of the fact. Civilization as external education, is but a transition to culture as internal education; and in this first stage it produces evils for which it furnishes the remedy in the higher stages. It carries the poison and the antidote in the same hand."

From this very general view of civilization or the progress of society, as an element in the predisposition to mental disease, we may turn to consider the influence exerted by widely diffused physical agents, or the aggregate of such, as Seasons — Climate. Concerning the influence of Seasons, the following statistics furnish some interesting information. They are derived from the reports of Institutions in the United States:

March	1283	
April	1339	
May	1497	
		4119—In Spring months.
June	1555	
July	1409	
August	1223	
		4187—In Summer months.
September	1314	
October	1336	
November	1305	
		3955—In Fall months.
December	1146	
January	1107	
February	1107	
		3360—In Winter months.
		15,621

One circumstance is to be noted: This table represents only the month when the *admissions* took place, and does not necessarily agree with the month when the attack supervened. Still it furnishes an approximation to the period of commencement. The Summer months have the greatest number; next the Spring, and lastly the months of Winter. Let us compare this with other countries. M. Aubanel and Thore give the following table of admissions at the Bicetre, as well as the total admissions at a large number of Asylums:

	Bicetre from 1831–8.	Various Asylums.
Summer	1093	1818
Spring	997	1587
Autumn	955	1415
Winter	886	1344
	3931	6164

To this we may add the experience of Esquirol and others:

	Esquirol.	Guistain.	Parchappe.
Spring	406	61	1447, or 542 per cent.
Summer	445	55	
Autumn	365	58	1222, or 458 per cent.
Winter	341	50	
	1557	224	2669

The general fact may be deduced from all these data, that there is some correspondence between the warmth of the weather and mental disturbance. Dr. Webster states that the experience of Bethlem Hospital is to the same effect. "This result," says he, "is certainly at variance with the generally entertained opinion that madness prevails most commonly in London during the cold weather of winter, when suicides are also said to be frequent, especially in the murky month of November. Such an assumption is, however, erroneous, seeing insanity is not only met with to a greater extent during hot weather, but more cases of self-murder are usually recorded both in June and July than during the colder season." But, if hot weather favors the development of insanity, it does not follow that warmer climates have more insane persons. The contrary is the fact. In Sweden and Norway a larger portion of the inhabitants become mad than in any other part of Europe. The disease is more frequent in Northern Germany than Southern Germany. Mania prevails more in Belgium than in France, and more in the Northern than in the Southern Department of that Empire. In Northern Italy insanity is said to be twice as common as in Southern Italy. So, too, in the Northern portions of these United States, it is much more prevalent than in the sunny South.

But there are also atmospheric changes which exert an influence upon our feelings and health, of which we can furnish but little explanation. Yet every man is familiar with the fact that one day he feels clearer, more active and energetic — that the fresh air he breathes stimulates him to renewed vigor, while on another day it depresses him, makes him peevish and ill-tempered, although the circumstances surrounding him are on both days apparently similar. These impressions prevailing more or less in all countries, are thought by some to be more marked among us, and to act as an exciting agent upon our nervous susceptibilities. Thus, Dr. Ray observes, "The operation of the physical causes is aided in this country, there is much reason to believe, by peculiar atmospheric conditions. This is not the place for discussing the scientific question, but of the general fact that our climate produces a remarkable degree of nervous excitability, and thereby favors the development of insanity, I think there can scarcely be a doubt. That our people are distinguished by restlessness, impulsiveness, impetuous and boisterous movement, may be regarded as a fixed fact. That this trait is to be attributed to atmospheric influences, is rendered probable both by the absence of any other adequate cause and by the greater excitability which accompanies insanity in this country, as compared with others. This character of the disease strikes the most superficial observer, in passing through the galleries of American and European hospitals for the insane. In the former, especially those of the Northern and Eastern States, more excitement will meet his notice, in a single visit, than he will see in the latter, particularly the English, in a whole week or month. And yet this excitability is but little less apparent in the Germans, Irish and English, who abound in our hospitals, than in the native Americans." The limits of a report will not allow of any extended illustration of the connection of meteorological phenomena and the production of disease or the modification of its forms. Every one of us will recall to memory some persons who appear to be peculiarly susceptible to such impressions, and in whom lassitude and various unpleasant sensations always are present during certain conditions of the atmosphere. A less degree of this same influence is doubtless experienced by all, though the symptoms cannot be distinctly pointed out, still less can they be explained at all satisfactorily. The phrase "being under the weather," to denote a general feeling of being slightly unwell, is probably the general acknowledgment of this obscure connection, which language has thus embalmed. This whole subject derives much light from the well authenticated histories of other countries, where meteorological phenomena induce very striking effects upon the human system. In *Buenos Ayres*, according to Sir Woodbine Parish, there is a wind which sometimes prevails, and produces in some persons peculiar irritability and ill-humor, almost amounting to a disorder of their moral faculties, of which curious fact he gives the following striking illustration: "Some years ago, Juan Antonio Garcia, aged between 35 and 40 years, was executed for murder at Buenos Ayres. He was a person of some education, and rather remarkable for the civility and amenity of his manners; his countenance open and his disposition generous. When this *vento norte* — the peculiar north wind — set in, he appeared to lose all command over himself, and such became his irritability that during its continuance he was engaged in continual quarrels and acts of violence. Before his execution, he admitted that it was the third man he had killed, besides being engaged in various fights with knives. When he arose from his bed in the morning, he told Sir Woodbine Parish's informant, he was always aware at once of its accursed influence upon him; a dull headache first, and then a feeling of impatience at every thing about him. If he went abroad, his headache generally became worse, and a heavy weight seemed to hang over his temples. He saw objects, as it were, through a cloud, and was hardly conscious where he went. He was fond of play, and if in such a mood a gambling house was on his way, he seldom resisted the temptation. Once there, a turn of ill-luck would so irritate him, that he would probably insult some one of the bystanders, and if he met with any one disposed to resent his abuse, they seldom parted without bloodshed. The relations of Garcia corroborated this account, and added, that no sooner had the cause of excitement passed away than he would deplore and endeavor to repair the effects of this infirmity. The medical man who gave this information, attended him in his last moments, and expressed great anxiety to save his life, under the impression that he was hardly to be accounted a reasonable being. 'But,' he adds, 'to have admitted that plea, would have led to the necessity of confining half the population of the city when the wind sets in.'"

In the correspondence of the poet Cowper, there are very frequent allusions to the effect of weather upon his morbid feelings.

These are some of the external agents which act upon man in the aggregate, which scatter broadcast the seeds of insanity to await the special influences necessary for its development and increase. Are there no corresponding general influences concealed within our nature to which we must take heed; no subjective phenomena which add to the liability of the individual that he shall lose his self-control and reason?

From this interesting inquiry, want of space in this report obliges me to turn reluctantly aside.

I must now glance at the more *specific* influences connected with the personal history of the Individual. The first of these to be noticed, is the influence of age in the production of insanity, or rather of the time of life when the probability is strongest that the various circumstances which contribute to its development will surround the individual. The following table has been carefully compiled from the reports of the Asyla in the United States, in which the ages at admission are specified. In some of these, the sex is not particularized. I have therefore added a column so as to include these cases:

Various Ages.	Males.	Females.	Both.	Total.
Under 20 years of age................	718	741	225	1684
Under 30 " "	2897	2954	925	6776
Under 40 " "	2690	2614	748	6052
Under 50 " "	1892	1826	545	4263
Under 60 " "	984	974	298	2256
Under 70 " "	457	419	94	970
Under 80 " "	145	129	20	294
Under 90 " "	15	31	......	46
	9798	9688	2855	22,341

It will be very readily perceived that the cases admitted from 20 to 30 years of age, are by far the most numerous. Drs. Charles Evans and Pliny Earl make the following remarks in support of a similar conclusion:

> "European authors upon insanity assert that a greater number are attacked with the disease between the ages of thirty and forty years, than during any other decade of life. We believe this proposition to be untrue in regard to the United States, and that the maximum number in this country is between the ages of twenty and thirty years."

To the same effect our distinguished colleague, the pioneer in psychological medicine in our State, Dr. Awl, states:

> "It appears that the largest number of persons become insane between the ages of twenty and thirty years. This differs from European experience, but agrees with observations made in different Lunatic Hospitals in the United States. In France and England, according to the best authorities, the greatest number become deranged between the ages of thirty and forty. This difference may in a great measure depend upon the nature of our institutions and the premature age at which intellect is brought into action in this country."

In this connection it must not be forgotten that if a larger number of persons become insane between 20 and 30 years of age than during any other decade, so also there is an excess of the general population of that age over every other, excepting the period under 20 years. It does not necessarily follow, therefore, that this decade is more favorable to the production of insanity, simply because it supplies a greater number of admissions. To ascertain this point with more certainty, we must estimate both the proportion of those living in the community at the time and those becoming insane. A comparison of the numbers stated in the foregoing table with the general population under each decade, as given by the census of 1850 of the United States, will modify any opinions thus founded. The following are the percentages of the various decades in the general population and among the insane on their admissions:

	Per centage among general population.	Per cent. of admission.
Under 20 years	51.84	7.53
" 30 "	18.56	30.33
" 40 "	13.36	27.09
" 50 "	8.12	19.08
" 60 "	4.90	10.10
" 70 "	2.66	4.34
" 80 "	1.14	1.32
" 90 "	.33	.21
" 100 "	.04	....
	99.95	109.00

Thus, it will readily be seen, that the period from 40 to 50 bears a much higher proportion to the general population of that age than any other, and the comparative influence exerted by the different ages may be stated as in the following order of gravity:

Between 40 and 50....	2.34	7.00	Between 60 and 70....	1.7.	5.1.
“ 30 and 40....	2.19	6.56	“ 70 and 80....	1.15	3.65
“ 50 and 60....	2.06	6.18	Under 20..............	.14	.42
“ 20 and 30....	1.63	4.89	Over 80..............	.56	1.68

This result will be somewhat, but not very materially modified, by taking the age of occurrence instead of the age of admission as the basis of calculation. Wherever it has been practicable to do so, I have collected from a number of reports, all the cases whose ages, when first *attacked*, are given, and embodied the results in the following synopsis. It is to be regretted that the practice of Superintendents, in reporting upon this topic, has not been more uniform:

Various Ages.	Males.	Females.	Both.	Total.
Under 20 years of age................	771	710	274	1755
Between 20 and 30.....................	2175	1978	894	5047
“ 30 and 40.....................	1527	1348	635	3510
“ 40 and 50.....................	880	877	379	2136
“ 50 and 60.....................	430	390	169	989
“ 60 and 70.....................	179	111	82	372
“ 70 and 80.....................	46	26	6	78
	6008	5440	2439	13.887

From this we obtain the following results, to which I add the percentage of those living at different ages in the community at large, for the sake of convenient reference:

	Percentage of general population.	Percentage of insane.
Under 20 years...........................	51.84	12.63
“ 30 “	18.56	36.34
“ 40 “	12.36	25.27
“ 50 “	8.12	15.38
“ 60 “	4.90	7 12
“ 70 “	2.66	2.67
“ 80 “	1.14	.56
“ 90 “	.33	....
“ 100 “	.04	

The order of liability at different ages, as deduced from these data, may be stated with sufficient precision by the following formula:

Between 30 and 40	2.04
“ 20 and 30	1.95
“ 40 and 50	1.89
“ 50 and 60	1.45
Between 60 and 70	1.
Under 20	0.24
Over 70	0.04

This result will not be materially affected by any closer mode of analysis; and it will be seen that while youth and extreme age are alike shielded from many of the causes of insanity, the vigorous portion of life, when "man is in his prime," is particularly liable to the incursions of mental disease. It remains to be seen how far these conclusions agree with the statistics of other countries, and how far these very conclusions may be modified by the sexes.

Dr. Tuke gives an analysis of the ages of 7,295 persons on admission into hospitals in different parts of the world. Thus it was found that there were —

Under 20 years	619
From 20 to 30	1682
“ 30 to 40	2051
“ 40 to 50	1426
“ 50 to 60	769
From 60 to 70	551
“ 70 to 80	177
Above 80 years	20
	7295

"The general result of this table," adds Dr. Tuke, "favors the opinion that more patients are admitted (but not necessarily that their disorder originated) between the ages of 30 and 40; then follows in order of frequency, the period between 20 and 30, and next between 40 and 50. The table of admissions at Bicetre, from 1831 to 1838, is, to a certain extent, in accordance with these results."

M. M. Aubanel and Thore conclude from the statistics of insanity in Paris, that the age from 35 to 40 exerts a special influence over the production of insanity.

The experience of 44 years, from 1796 to 1840, at the York Retreat, showed that in the greater proportion —

one-third of the whole number — the attack commenced between 20 and 30 years of age.

Esquirol arrives at the following results: 1st. "That the ages which furnish the greatest number of insane, is — for men, between 30 and 40; while with women it is between 50 and 60. 2d. That the ages which furnish the fewest, are, for both sexes, infancy, youth and advanced age. 3d. That among women, insanity is manifested *earlier* than among men."

To this last question a few observations may not be inappropriate. The following table will enable us to compare the percentage of males and females at the ages when first *attacked*, with the percentage of the same sex living in the general community at the same ages:

Various Ages.	MALES.		FEMALES.	
	Gen. Pop'n.	Insane.	Gen. Pop'n.	Insane.
Under 20	51.01	12.83	52.75	13.05
" 30	18.65	36.2	18.46	36.36
" 40	12.86	25.41	11.81	24.69
" 50	8.38	14.64	7.85	16.12
" 60	4.97	7.15	4.82	7.16
" 70	2.64	2.97	2.71	2.04
" 80	1.11	0.76	1.18	.47
Over 80	.35	....	.41	....
	99.97	99.96	99.99	99.89

I am therefore justified in concluding from these premises —

1. That the greatest *absolute* number of cases occurs between 20 and 30 years of age; but a strict comparison of the cases occurring with the general population existing at the same ages, shows a slightly *increased proportion* between 30 and 40 years; or that mankind, during that period of life, are brought into contact with more causes of insanity than during any other decade.

2. That the least tendency to insanity is shown under 20 years and over 60 years of age.

3. That in *males* the greatest ratio exists between 20 and 40 years; there being but little difference between the two decades — that between 30 and 40 having a very slight excess.

4. That in *females*, between 30 and 40 years furnishes the highest ratio; the next being from 40 to 50; then from 20 to 30 years.

5. That *males*, on an average, become insane at an earlier period of life than females.

Sex. — The influence exerted by the sex of the party upon the age at which the most numerous causes of insanity surround the individual, has already been adverted to. It remains to be determined which of either sex is the more liable to be afflicted with mental unsoundness. Cœlius, Aurelianus and Arœteus maintained that men were more liable to become insane than women. In modern times the opposite hypothesis, first propounded by Esquirol, has been supported by a majority of writers upon the subject. Dr. Thurman of York, England, and Dr. Jarvis of Dorchester, Massachusetts, however, agree that Esquirol's conclusions are based upon imperfect premises. Their investigations lead them to the conviction that "males are somewhat more liable to insanity than females."

The statistics of 17 Asyla in the United States, show the admissions to be in the following proportions: Of 38,446 patients, there were 20,233 males and 18,213 females. We must compare this result with the proportion existing between the sexes, in the community at large, before we can arrive at conclusions of any value.

	Per centage of general population of U. S.	Per centage among insane population.
Males	51.26	52.65
Females	48.73	47.34
	99.99	99.99

Or, in other words, while in the community at large we find existing 1.05 male to 1 female, we discover among the insane 1.11 male to 1 female.

We may extend this comparison to Great Britain, where there is an excess of the female population:

	Number of patients admitted.	Per centage.
Male	36,044	.53
Female	31,832	.47
	67,876	100

In Norway, the proportion of existing cases to the general population, as ascertained in 1825, 1835 and 1845, is very curious, showing, as years advanced, a gradually increasing proportion of females.

In 1825, there were 1 insane to 508½ males, and 1 to 597½ females.
“ 1835, “ “ 1 “ “ 322 “ “ 1 “ 345 “
“ 1845, “ “ 1 “ “ 318 “ “ 1 “ 301 “

This shows an accumulation of female cases which may be accounted for, in a general way, by the greater mortality which prevails among men than among women. It is supposed that by adopting the *existing* cases merely, instead of the occurring cases, as the basis of his calculations, Esquirol and others attained the erroneous conclusion already alluded to. The admissions, on which the foregoing tables are calculated, represent sufficiently close the number of *occurring* cases.

From all which we may justly infer that *males* are somewhat more liable to be attacked with insanity than females.

Civil Condition. — The question whether celibacy is not more favorable to mental disease than marriage, receives but slight illustration from the meagre figures I have been able to glean upon the subject from the reports of our institutions.

Condition.	Males.	Females.	Total.
Single	4127	3092	7219
Married	3035	3275	6310
Widowed	336	930	1266
	7498	7297	14,795

I wish to guard the inference which might easily be drawn from this table, by the remark that the excess of *single* persons may be due, in many cases, to the fact of insanity, or more properly to the mental diathesis preceding the outbreak of insanity, and therefore is not uniformly a *cause*, but simply an effect of insanity.

Occupation. — Great caution is requisite in the investigation of the influence of occupation in the production of insanity, and probably less value should be attached to any enumeration of the pursuits of those who enter our Asylums, however accurate it may be, than in those countries where an *occupation* is more distinct and more clearly defined than with us, and where an individual seldom changes his settled business. In such countries, the *occupation* will indicate, with tolerable certainty, the habits and culture of the individual. With us, men not only repeatedly change from one occupation to another, but it is also impossible to arrive at any thing like an approximation of their cultivation, their intellectual force or the psychal influences which surround them, from a mere knowlege of their daily avocation. Nor does it furnish any better evidence of the social and pecuniary standing of the party. Comfort and competence are the characteristics of none, but may be found in all employments. Bearing these considerations in view, the following table may not be without some interest, at any rate as a means of testing the accuracy of certain very prevalent notions on some points. The first column gives the numbers engaged in the different occupations, as I have gathered them from the reports of 17 institutions of the United States. I have classified them, for the sake of convenience, in the manner adopted in the census of 1850. In the second column, their ratio in the hundred is calculated, and in the third, the percentage of the same class is worked out from the numbers given by the census of 1850. Any one who feels an interest in the subject, can thus easily draw the relative proportion of each class among the insane or sane population. Males only are included.

Occupation.	No. of each class among the insane.	P'rcent'ge of each among the insane.	Percentage of each among the gen'l. community.
1. Engaged in commerce, trade, manufactures, mechanic arts and mining............	3976	34.05	29.72
2. Engaged in agriculture..................	3631	31.09	44.69
3. " in labor other than agricultural..	1906	16.32	18.50
4. " in army	34	.29	.1
5. " in sea or river navigation........	314	2.69	2.17
6. " in profession of medicine........	209	1.79	.82
7. " in " " law	134	1.15	.45
8. " in " " divinity	127	1.09	.50
9. " in other pursuits requiring education	725	6.21	1.71
10. Engaged in civil or governmental service...	29	.25	.46
11. " in other occupations	96	.82	.84
12. " in *no* occupation	403	3.45	....
13. " in occupation not ascertained	93	.79	....
Totals............................	11,677	99.99	99.96

Many Superintendents of Asyla, believing that statistics are of little value in illustrating the subject of insanity, do not report the occupations of the patients they receive. This is particularly the case with most of those in New England. In all probability, if these were included, the proportion of persons engaged in commerce, manufactures, etc., would be greatly increased. So with regard to the army and navy, the government Hospital at Washington, not included in the above enumeration, would doubtless furnish additional numbers belonging to both. So that most probably the proportion of these classes would be high to the whole number thus employed. Even with the very meagre sources from which the information has been derived, the ratio is equal to that of any other class. As far as any deduction can be safely drawn from this table, it militates decidedly against the theory that *farmers* are especially liable to become insane — a theory which has received support from the great number of that class found in every Hospital, in comparison with those of any other single occupation. In every hundred cases, we find 31.09 farmers, and only 1.79 medical men, or 1.15 lawyer. If we follow the comparison still further, the contrast is still more striking. Thus, about 5 merchants or 2 tailors will be included. But this great preponderance is to be expected; for, in the community at large, *farmers* nearly equal in numbers all other occupations combined. The foregoing table will show that a greater liability to insanity exists in *commercial pursuits*, the ratio of which, among the insane, exceeds, by one-seventh part, what obtains in the general community, while professional life (including the three distinct professions only) is three times more numerously represented among the insane population than in the general population. This result is opposed to the statement of Sir Andrew Halliday, that insanity prevails more in agricultural than in manufacturing communities; and also to the conclusions arrived at by the Superintendent of one of the institutions in this State.

(To be continued.)

NOTES ON SOME OF THE CHEMICAL REACTIONS OF CORROSIVE SUBLIMATE.

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THE solutions of corrosive sublimate used in the following experiments, were made by dissolving the pure salt in water. A small drop of a saturated solution of the reagent was applied by means of a pipette, to a *grain measure* of the corrosive sublimate solution, contained in a watch-glass, or upon a glass slide.

The amount of corrosive sublimate operated upon will frequently be stated in the form of a fraction, it always being understood to imply the fractional part of a grain of the salt dissolved in one grain of water.

1. *Potash.*

1. $\frac{1}{100}$th grain of corrosive sublimate, gives with a small drop of a strong solution of potash, an immediate bright yellow amorphous precipitate, insoluble in excess. The precipitate is rather copious.
2. $\frac{1}{500}$th, gives no immediate precipitate; after standing some little time, there is a slight cloudiness.

2. *Ammonia.*

1. $\frac{1}{100}$th, gives a good dirty white flocculent precipitate, insoluble in excess of the reagent. If the mercury solution be exposed to the vapor of ammonia, it gives the same reaction.
2. $\frac{1}{1000}$th, a good bluish white amorphous precipitate.
3. $\frac{1}{2500}$th, gives a pretty good precipitate.
4. $\frac{1}{5000}$th, a quite satisfactory reaction, by either ammonia or the vapor.
5. $\frac{1}{10000}$th, gives a perceptible cloudiness.

3. *Carbonate of Potash.*

1. $\frac{1}{100}$th, if a small quantity of the reagent is added to the mercury solution, it gives a yellowish precipitate; when an excess of reagent is used the precipitate is of a brick-red color.
2. $\frac{1}{500}$th, only a slight cloudiness.

4. *Iodide of Potassium.*

1. $\frac{1}{100}$th gives an immediate bright scarlet amorphous precipitate, which is readily soluble in excess of the reagent, or the mercury solution.

2. $\frac{1}{500}$th, a yellow-red precipitate.
3. $\frac{1}{1000}$th gives a yellowish precipitate.
4. $\frac{1}{2500}$th, by using a very small quantity of reagent, a pretty good and permanent yellow precipitate.
5. $\frac{1}{5000}$th, this quantity gave no satisfactory indication in a number of cases in which the least possible quantity of reagent was used.

The least visible quantity of corrosive sublimate in the solid state, introduced into a solution of iodide of potassium becomes immediately yellow, changing to scarlet.

When a solution of corrosive sublimate is evaporated to dryness, and the residue touched with a small drop of iodide of potassium solution:

1. $\frac{1}{100}$th grain, the deposit assumes a fine scarlet color.
2. $\frac{1}{1000}$th grain, much the same as 1.
3. $\frac{1}{10000}$th, the deposit assumes a distinct yellow color, and soon dissolves.

5. *Ferrocyanide of Potassium.*

1. $\frac{1}{100}$th, a copious dirty white amorphous precipitate, soluble in excess.
2. $\frac{1}{1000}$th, a pretty good precipitate, readily soluble in excess.
3. $\frac{1}{2500}$th, difficult to obtain a slight trace.

6. *Ferricyanide of Potassium.*

1. $\frac{1}{100}$th, a good greenish yellow amorphous precipitate, insoluble in excess.
2. $\frac{1}{1000}$th, much like 1.
3. $\frac{1}{2500}$th, a quite good greenish precipitate.
4. $\frac{1}{5000}$th, a just perceptible cloudiness.

7. *Chromate of Potash.*

1. $\frac{1}{100}$th, immediately a rather good greenish yellow flocculent precipitate.

2. $\frac{1}{500}$th, a distinct cloudiness.

Bichromate of potash gives no precipitate with a $\frac{1}{100}$th solution of corrosive sublimate.

8. *Nitrate of Silver.*

This test is for the purpose of detecting the chlorine of the corrosive sublimate.

1. $\frac{1}{100}$th grain of corrosive sublimate gives a copious, curdy white precipitate, which partly dissolves in excess of ammonia, and is soon replaced by a rather copious, partly granular precipitate.
2. $\frac{1}{1000}$th, a bluish white, soon changing to a white precipitate, soluble with difficulty in ammonia, but soon replaced by a dirty white, partly granular precipitate.
3. $\frac{1}{10000}$th, a rather abundant bluish white precipitate, readily soluble in ammonia, and soon replaced as in 2.
4. $\frac{1}{40000}$th, a quite good precipitate.
5. $\frac{1}{100000}$th, a very satisfactory reaction.
6. $\frac{1}{500000}$th, a very perceptible opalescence, which after a little time, becomes very distinct.
7. $\frac{1}{1000000}$th, gives a just perceptible cloudiness.

The last mentioned quantity of corrosive sublimate would contain only $\frac{1}{3800000}$th of a grain of chlorine. This result agrees closely with that obtained by the reagent with chlorine when in combination with ammonia, as given in Gmelin's hand-book, vol. ii., p. 355, in which a solution of sal-ammoniac containing one part of chlorine in 3,200,000 parts of water, gave with nitrate of silver "a barely perceptible cloud."

9. *Chloride of Tin.*

1. $\frac{1}{100}$th gives a light, gray, then darke precipitate, which is rather copious.
2. $\frac{1}{1000}$th, much like 1.
3. $\frac{1}{5000}$th, a quite good deposit.

4. $\frac{1}{10000}$th, a pretty fair indication.
5. $\frac{1}{20000}$th gives a distinct reaction.

10. *Hydrosulphuric Acid.*

The solutions of corrosive sublimate were acidified with hydrochloric acid, and a stream of washed sulphuretted hydrogen passed into 10 grains of the mercury solution.

1. $\frac{1}{100}$th, when the solution holds this proportion of its weight of corrosive sublimate, it gives an immediate brown, which soon changes to a dark brown, and ultimately to a copious black precipitate.
2. $\frac{1}{1000}$th, a yellow brown—brown, then rather copious black precipitate.
3. $\frac{1}{10000}$th, the solution immediately becomes brownish, then small brownish flakes, and after a little time a good brownish precipitate.
4. $\frac{1}{20000}$th, the solution immediately becomes yellowish, and in a few minutes very small brownish flakes appear, which, after standing for some time, subside and form a distinct deposit.
5. $\frac{1}{40000}$th, very soon the solution becomes turbid, and after standing some time a deposit is just perceptible; if viewed with a lens it is quite evident.
6. $\frac{1}{100000}$th, no indication after several hours.

11. *Copper Test.*

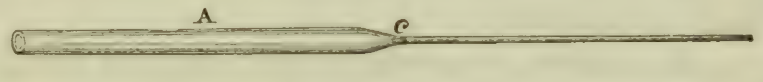
This test consists in introducing into the corrosive sublimate solution a small slip of clean copper foil, which will cause a decomposition of the mercury compound, with the deposition of metallic mercury upon the copper. The delicacy of the test is much improved by acidulating the mercury solution with hydrochloric acid, and also, by heating the acidulated solution. In the following experiments, a grain measure of the mercury solution was placed in a watch-glass and acidified with hydrochloric acid; the slip of copper being introduced into the solution, it was then heated over a small flame of a spirit lamp.

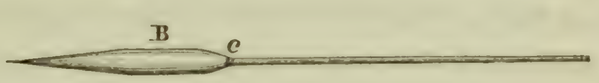
1. $\frac{1}{100}$th, grain of corrosive sublimate will impart to the copper an immediate silvery lustre, which soon becomes gray, and then dark gray; this reaction takes place equally well without the hydrochloric acid, or heat. The copper should not be less than about $\frac{1}{5} \times \frac{1}{15}$ inch, otherwise some of the mercury will become detached; after allowing the copper to remain in the solution for several minutes, it is to be removed and carefully washed with a small stream of water from a wash-bottle, or with water containing a little ammonia; it is then gently pressed between folds of filtering paper until perfectly dry. It is now placed in a small and perfectly clean and dry reduction tube; heat being applied to the closed end, the mercury will volatilize and condense a little distance above the point heated, in the form of a mist-like deposit, very readily discernible by the naked eye. If the sublimate be examined with a low power of the microscope, it will be seen to consist of innumerable spherical globules, which are opaque by transmitted light, and present a very bright silvery lustre under incident light. The tube should only be heated in the part which contains the copper; every time the mercury is volatilized it is attended with more or less loss.
2. $\frac{1}{1000}$th, the copper immediately presents a silvery appearance, and in a little time becomes gray. This takes place about equally well without heat. Without either acid or heat the deposit begins in a very little time; by heat alone, immediately. The copper, when heated in a reduction tube, gives a sublimate very perceptible to the naked eye.
3. $\frac{1}{10000}$th, when acidified and heated with a slip of copper of about $\frac{1}{10} \times \frac{1}{20}$ inch, the deposit is immediately perceptible, and very soon satisfactory. Without

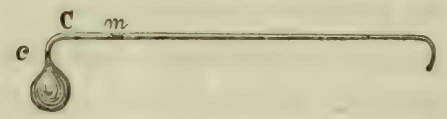
either acid or heat the deposit takes place very slowly. If the copper be heated in a narrow tube, it gives a sublimate quite perceptible to the eye.

When deposits much smaller than the last given, are heated in an ordinary reduction tube, the results are not uniform; depending upon the fact that the sublimate forms very small globules, which are distributed over a large space, and part of it seems to entirely escape condensation within the tube.

Very uniform results may be obtained by taking a small clean tube of about $\frac{1}{10}$ inch in diameter, and drawing it out into a fine capillary point of from $\frac{1}{30}$ to $\frac{1}{50}$ inch in thickness. An exact impression of the tubes used in the following experiments is given in the accompanying plate, Fig. A.







The copper is introduced through the wider portion of the tube to the point *c*, and then heat applied to the outer end and slowly brought to within a little distance of the copper. When the tube is soft, it is drawn off as shown in Fig. B.; at the same time a second reduction tube can be formed. The neck of the tube is now moistened with water, or wrapped with wet cotton, and then the blowpipe flame applied to the closed extremity, which is slowly fused into a bead, until the heat arrives at the copper, as shown in Fig. C. The capillary end may now be fused shut. When wiped and examined with the microscope, the mercury deposit will be found at about the point *m*, forming a very narrow ring of well defined globules. These tubes may be reserved for future examination.

4. $\frac{1}{20000}$th, the acidulated solution may be heated several times in the watch-glass, and as the fluid evaporates its place should be supplied with water. Care must be taken that the copper does not become dry. In a very little time the copper will present a silvery appearance, which soon changes to a very decided and satisfactory gray deposit. When heated in a tube, it yields a sublimate perceptible to the eye, and which, when examined with an amplification of about 75 diameters, will be found to consist of a ring of well defined globules. In a number of cases over one hundred globules, varying in size from $\frac{1}{1000}$ to $\frac{1}{10000}$ inch, were counted, many of them being about $\frac{1}{2333}$ inch in diameter.
5. $\frac{1}{50000}$th, treated as stated in 4, the copper being $\frac{1}{20}$ X $\frac{1}{40}$ inch, will, after some time, impart a quite distinct lustre to the copper, which, when heated in a tube, will present, under the microscope, a fine sublimate of globules, much like 4.
6. $\frac{1}{100000}$th, the copper receives a decided metallic lustre or tint; when heated in a tube, it always gives a very satisfactory result. In some few cases over one hundred globules were perceived, several of which measured $\frac{1}{1750}$ inch; the greater number, however, were quite small. None less than $\frac{1}{10000}$ inch were counted. In a majority of cases about fifty well defined and satisfactory globules were counted, the most of which were in the field of a $\frac{2}{3}$ inch objective. So far as the evidence of mercury is concerned, this quantity of corrosive sublimate will furnish just as satisfactory results as $\frac{1}{1000}$ grain, the only difference being in quantity.
7. $\frac{1}{500000}$th, the copper shows but a slight change. When heated in a tube, as many as twenty pretty good sized

globules were counted, the largest of which measured $\frac{1}{3000}$ inch; the most of them, however, varied from $\frac{1}{5000}$ to $\frac{1}{10000}$ inch. In a majority of cases only from five to ten globules measuring more than $\frac{1}{5000}$ inch were obtained. In this and the previous case many small points were observed, but they were too small to decide upon with certainty; in no case was any counted measuring less than $\frac{1}{10000}$ inch.

Amplification will assist somewhat in the determination of the mercury globules, but not so much as might be expected. When an amplification of 75 is used, a globule measuring $\frac{1}{3000}$ inch is perfectly satisfactory, such a globule, if a perfect sphere, would weigh $\frac{1}{150000000}$ grain. When of $\frac{1}{5000}$ inch, they are small but distinct and satisfactory; such a globule would weigh $\frac{1}{690000000}$ grain. When of $\frac{1}{7000}$ inch, and associated with larger ones, they are still rather satisfactory; weight $\frac{1}{1900000000}$ grain. When of $\frac{1}{10000}$ inch, they appear as mere opaque points, and are too small to be decided upon. When under an amplification of 250 or 300, a globule of $\frac{1}{7000}$ inch is very satisfactory; when of $\frac{1}{10000}$ inch, it may be made out with considerable certainty. An amplification of 400 or 500 does not improve it much; such a globule would weigh $\frac{1}{5560000000}$ grain.

On account of the curvature and thickness of the glass tube, the higher powers of the microscope cannot be applied; a $\frac{1}{5}$ objective is about as high as can be used with satisfaction. When upon a *flat* surface, much smaller globules than any of the above can readily be seen; with a $\frac{1}{8}$ objective, an "artificial star" measuring only $\frac{1}{25000}$ inch will present the characters of sphericity and opacity, and will reflect incident light; but it must be remembered that foreign matter will sometimes present the same properties, or at least so much like the mercury globule as to make it unsafe to draw any decided conclusion. It would therefore seem that a globule less than $\frac{1}{8000}$ or $\frac{1}{10000}$ inch could not be decided upon with certainty; the test, however, is so extremely delicate, that there is no need of torturing it even to this extreme.

It is not intended to imply that $\frac{1}{500000000}$ grain of mercury can be *recovered* by this test, but only that that amount may give satisfactory evidence under the microscope, when furnished by the test. The above experiments would seem to indicate that $\frac{1}{500000}$ grain of corrosive sublimate was about the least quantity that would furnish satisfactory evidence of the presence of mercury. There is a tendency on the part of some chemists to arrive at the conclusion that the smallest quantity of the result of a reagent or reaction that can be seen, is the amount that can be recovered. This is a gross fallacy.

In the above cases it should be remembered that the amount of mercury present in the corrosive sublimate, was as 100 is to 135.5. Therefore $\frac{1}{500000}$ grain of corrosive sublimate would represent only $\frac{1}{675000}$ grain of metallic mercury.

Most tests are dependent in their reaction, not upon the absolute quantity of a substance present, but upon the degree of dilution. In the copper test for mercury, however, it is a matter of absolute quantity more than degree of dilution, for—1. 10 grains of a $\frac{1}{100000}$ solution of corrosive sublimate gives nearly as good reactions as 1 grain of a $\frac{1}{10000}$ solution. 2. 10 grains of a $\frac{1}{500000}$ solution, nearly the same as 1 grain of a $\frac{1}{50000}$ solution. It requires, however, a longer time for the deposition to take place.

The smallest visible quantity of corrosive sublimate, when mixed with a small quantity of well calcined carbonate of soda, and heated in a small reduction tube, will give a copious sublimate of mercury globules.

12. *Extraction of Corrosive Sublimate from Water, by Chloroform and Ether.*

1. If 1 grain of corrosive sublimate be dissolved in 100 grains of water, and then agitated for several minutes with an equal volume of chloroform, the chloroform will extract about .04 grain of the mercury compound.
2. Ether, under the same circumstances, will extract .67 grain of the corrosive sublimate.

COLUMBUS, June 15th, 1860.

RECTO-VAGINAL FISTULA, ILLUSTRATED BY A CASE.

BY S. LOVING, M.D., COLUMBUS.

RECTO-VAGINAL fistula is not a very common surgical disease, yet it is sufficiently common, as it seems to us, to demand more attention than is generally given it by writers on surgery and on the diseases of women. It is only exceeded, as a misfortune, by vesico-vaginal fistula, which is of more frequent occurrence and more difficult of cure.

Recto-vaginal fistula is usually a consequence of protracted or difficult labor, but may occur from the violence of the uterine contractions in ordinary labor, from abscess, from stricture of the rectum, and from malignant or syphilitic ulceration.

The size of the fistulous opening is various, and depends somewhat upon the cause. When consequent upon abscess, it is sometimes so small as only to admit the passage of a probe, or a small catheter. Even in cases arising from long-continued pressure of the fœtal head, or violence from instruments, we occasionally find it not larger. When caused by uterine contraction, or the passage of the fœtal head per anum, of course the recto-vaginal septum is mostly rent asunder. In the majority of cases, however caused, it is neither so small nor so large, and usually is situated nearly midway between the os uteri and the sphincter ani.

Its shape is also various. Sometimes it is a mere slit, ranging with the long or short diameter of the vagina. More frequently it is nearly circular, or oval; and again it is irregular. Often both size and form are changed from the original state by the reparative efforts of nature.

Unlike vesico-vaginal fistula, the accident under consideration, when not dependent on malignant disease, tends to a spontaneous cure. This is because fœcal matter is not so irritating as the urine, and because it is not so constantly voided. This tendency to spontaneous recovery is strongest in cases occasioned by direct violence, as when the septum is torn by injudicious use of instruments, or the child expelled per anum. It is also apparent when the fistula is caused by sloughing from long-continued pressure, but it is not so strong, and recovery, without an operation of some kind, is much less apt to occur.

We have accounts of recoveries without operation in several cases of the first kind. One of the most remarkable is one reported in March, 1839, by Dr. Jno. Andrews, formerly of Steubenville, but now of this city, for the *Phila. Med. Examiner.* In this case the recto-vaginal septum was torn along with the posterior portion of the perineum and the child passed per anum. "The bowels were kept constipated during a number of days, and recovery took place." Another case, similar in character in which a perfect cure resulted, is mentioned by Ashton. Spontaneous cure, or cure without operation in cases in which the injury is not so extensive, is of frequent occurrence, but it is not to be expected in any thing like a majority of instances. Still we are never to forget that it is probable, even under unfavorable circumstances, and nothing should be left undone which may be calculated to promote it. It will occur also sometimes in cases resulting from inflammation and sloughing, but the progress of such a case will of course be different.

When we have a case from laceration during delivery, measures should be immediately taken to bring the edges of the laceration as nearly in apposition as possible. This may be done by placing the patient in proper position and by the application of bandages and compresses. The position should be on the back, with the knees flexed and drawn close together. When there is laceration of the perineum with the injury to the recto-vaginal septum, it should be closed with sutures of silver wire. Opium should be given in sufficient quantities to keep the bowels constipated. The urine should be carefully drawn through a *male* catheter, every four or six hours, and the parts kept as clean as possible by frequent gentle syringing with warm water. In rare instances there will be union by the first intention, but generally the wound will, if it heal at all, close by granulation.

If the fistula be caused by sloughing from pressure, or other agency, of course nothing can be done until sloughing has ceased, and the ulcerated surface assumes a healthy condition. Every effort should be made to establish this condition as quickly as possible; and when healthy granulations make their appearance, we should, after the administration of a gentle purgative, place the patient in the position before mentioned, and follow the same course of treatment as for fistula from laceration. Stricter attention to cleanliness will be necessary in these cases, because the discharge will be more profuse, and probably more irritating, and it will oftener be necessary to use stimulating lotions, for the ulcer will frequently assume the weak form. During the treatment, it will be well to wash out the vagina with warm water each time after the wire is drawn away, so that not a drop shall remain in contact with the tissues. No one will expect a perfect cure in every case, by these means, but if we succeed in less than one half we have cause for satisfaction, for, in the first place, the woman's sufferings are not increased, and are confined to one period; and, in the second place, we avoid the uncertainty and danger which attend all the plans of operation which have been recommended; and, more than all, we avoid that intermediate period, in which the woman must necessarily deny herself most of the comforts and all the pleasures of existence, or become an object of disgust and aversion to all with whom she comes in contact.

The danger attending the modern operations for this affection are not formidable; indeed, where the fistula is small, and situated low down, it can scarcely be said there is danger; but when it is large, and seated nearer the os than the sphincter ani, there is danger from inflammation, and of wounding the peritoneum. When we fail in effecting a cure by the plan described, and we will often fail, we must be content to wait until nature has done as much as she can do, and then resort to some one of the various plans recommended by surgeons. Where the fistula is very small it will sometimes only be necessary to pass a double thread through it by means of an eyed probe, and allow it to remain sufficiently long to excite inflammation, which may be accelerated by moving the thread back and forth once or twice daily. When the requisite amount of excitement is produced the thread should be withdrawn, the patient should be put at rest and the bowels kept quiet until the cure is complete. Sometimes caustics, the cautery, or nitric acid is used instead of thread or twine. When it is consequent upon abscess, it is sometimes cured by the means just mentioned, and failing with these, we are recommended by one writer, Brown, to proceed as in fistula in ano.

It seems to us, however, that this would be rather a harsh method of procedure, and not altogether free from risk of making the patient's condition worse than before, and we should not like to adopt it until all other means had failed. We should prefer Simms's or Bozeman's operation. When the opening is large, and not curable except by bringing its edges together, they should be carefully pared, and sutures of silver wire applied in the manner recommended by Dr. Simms, or in that recommended by Bozeman.

When arising from cancerous ulceration, it is only to be regarded as a symptom of the advance of the original disease, and we can do no more than palliate. The writer once saw a case in which the fistula was said to have arisen from primary syphilitic ulceration. It was small, and situated about an inch above the sphincter ani. The woman was cured of spyhilis by the usual remedies, and of the fistula by the application of nitrate of silver.

We should always remember, whether we treat a case immediately after labor, or at a subsequent period, that rest, position, cleanliness, constipation of the bowels by opium or other means, careful attention to the urine, are essential to success. The patient should also use mostly a "dry diet."

The following case will illustrate one thing which we have endeavored to show in this paper—namely, that by persistent efforts we may sometimes cure bad cases, even when caused by sloughing, by assisting the reparative efforts of nature:

On the 12th of February last I was requested to take charge of a hale, hard-working woman of fine physique, aged 36 or 37 years, in labor with her first child.

The labor was much protracted, and attended with great suffering, in consequence of inefficient uterine action, rigidity of the os uteri, and of the soft parts generally. The head descended to the outlet and pressed slightly upon the perineum, but at this stage the pains almost ceased and no further progress was made for several hours, when symptoms of exhaustion becoming apparent, it was necessary to use the short forceps to complete the delivery. The instrument was easily applied, and the child delivered without an untoward circumstance. The child was evidently dead before the operation. When the patient was aware that the labor was over, she expressed her satisfaction, and immediately sunk into a state of profound exhaustion, with all the symptoms which usually attend that alarming state. I almost despaired of her life for twelve hours, but she at length revived. My satisfaction was, however, much lessened on finding the external organs of generation painful and greatly swollen.

Inflammation had already begun, and extensive sloughing followed, involving the posterior commissure, the inner surfaces of the Labia Minora, the parts about the orifice of the urethra, and both the anterior and posterior wall of the vagina. It was most extensive in the posterior wall of that canal, and extended further upward than could be seen without the use of a speculum. Diarrhœa of a colliquative character appeared, seemingly in consequence of the process of mortification and the exhausted state of the patient, and, on the second day after the delivery, it was noticed by the nurse that the greater part of the alvine discharges escaped through the vulva, and that the patient had little or no control over them. An examination with the finger proved that the recto-vaginal septum had sloughed through, about one and a half inches above the sphincter ani. The opening was sufficiently large to admit the points of two fingers with facility, was rather oval in shape, and had its longest diameter ranging from above downwards. The speculum showed its edges to be still sloughing, and the probability at that time was, that it would be much larger before mortification ceased and the process of granulation became established. Active treatment, which had previously been directed for checking the diarrhœa, was continued. Stimulants and food were freely used for the support of the patient's strength, and the diseased parts were kept as clean as possible by frequent washing with tepid water and milk, and gently stimulated after each cleansing with a weak solution of chlorinated soda. On the fourth day the diarrhœa stopped, and the sloughs began to separate.

Laudable pus was mingled with the fœtid sanious discharge, which became less abundant than before. Some granulations appeared about the orifice of the uretha, but the sloughing still continued in the walls of the vagina, and was most extensive in the posterior wall. On the 8th day the sloughing ceased altogether, and the whole vagina, as far as could be seen by separating the labia, presented a granulating surface from which pus flowed in abundance. The opening through the posterior vaginal wall into the rectum was much the same shape as before, but was larger. Had it been circular a twenty-five cent piece would nearly have covered it. Its edges, which were somewhat regular, were now healthy and granulating, and felt much thicker than before the sloughing ceased.

The finger introduced through the vagina could easily be passed into the rectum, and through the rectum into the vagina.

Gas escaped through the vulva from the rectum instead of through the anus, and the greater part of a fœcal evacuation, which occurred about an hour before the examination, escaped by the same channel. Several small lumps were in the vagina at the time of the examination.

The case had a discouraging aspect. There seemed no likelihood of a cure except by an operation, which the patient's condition and the condition of the parts affected of course precluded at that time.

I had, however, a hope, that as the ulcerated surface seemed so healthy, and as the patient, though much debilitated, had a good constitution, that if the parts could be kept clean and perfectly at rest, the fistula might be healed by the process of granulation. No injury could come from preventing a passage from the bowels for a few days, and perhaps but little inconvenience, as but little solid food was used.

I determined to give the plan a trial, to administer opium in sufficient quantities with, or without astringents, to keep the bowels perfectly quiet, and to persevere as long as the system seemed not to suffer. My plan was most faithfully carried out, and there was no passage from the bowels for nine days and a half, from the beginning of the attempt.

The parts were kept perfectly clean by gently syringing with tepid milk and water, and anodyne or stimulating lotions were applied from time to time as seemed necessary. The urine (as had been done from the delivery) was carefully drawn off twice daily through a gum male catheter, but no other than ocular examinations by the aid of a speculum (very gently introduced, and only for a short distance), were made. The opening diminished in size day by day. At the end of the time mentioned (the tenth day) the patient became very uneasy, had colic pains, and insisted on having a movement, because she felt sure there must be a great accumulation, and that if she was to be cured she ought now to be well. I agreed with her, and on examination by both rectum and vagina, found the fistula apparently entirely closed, and a firm-feeling cicatrix in its place. A probe passed gently over this did not penetrate. I directed an ounce of the ordinary castor oil mixture to be taken every two hours for the purpose of emptying the bowels, feeling a considerable degree of anxiety as to the result. One hour after the third dose of the mixture, there were three passages which escaped entirely by the natural channel, and without lacerating the cicatrix, though the first was hard and lumpy and occasioned sharp pain.

An examination next morning proved the cicatrix intact, and the opening perfectly closed.

The patient continued to regain strength, and at this time (April 20th) is nearly in her usual health. She has entirely recovered from the local effects of her unfortunate parturition, except that the vagina is slightly narrowed by a cicatrix extending across the posterior commissure.

PLEURO-PNEUMONIA OF NEAT CATTLE.

Having been appointed a member of the commission instituted by his Excellency, William Dennison, Governor of Ohio, to investigate the cattle disease now prevailing in Massachusetts, under the name of pleuro-pneumonia; and having made myself acquainted with that disease by a visit to the locality where it prevails, and by examination of the symptoms in the living animal, and the appearances presented upon dissection after death; and a careful investigation of the history of this disease, as recorded by European veterinarians and physicians, I have arrived at the conclusion that this malady is one involving so many interests that a short description of it would prove interesting to the readers of a medical journal.

The disease of neat cattle called pleuro-pneumonia has, at times, prevailed extensively in central Europe for several centuries. It first appeared about the year A. D. 350, and has, when prevailing, destroyed large numbers of cattle. In later years its cure and prevention have occupied the attention of several of the European governments; consequently, its nature and the laws of its propagation are beginning to be somewhat better understood, and the preventive means, at least, have been duly ascertained.

The cause of this disease, however it may have first originated, is, like that of small-pox and others of the catalogue of contagious or transmissible diseases, some principle or element, which, being the product of disease in one animal, is capable of producing a like disease in another of the same species, when brought into relation to its system, and always reproducing the same disease in all its essential characteristics. This character of transmissibility makes the subject of greater interest, because, on the one hand, intercourse between the sick and the well being prevented, the disease is avoided, and on the other, this intercourse being permitted, the spread of the malady is limited only by the number of susceptible individuals exposed to its influence.

The fatality of the disease is very great, but what the percentage of recoveries would be cannot be ascertained at present, either in this country or in Europe, as in both countries the diseased cattle have been killed before the natural termination of the disease.

The seat of this disease is in the lungs, and its detection is very easy to a person familiar with the science of physical diagnosis and the application of this to the chest of the animal. Besides the physical signs, there are other symptoms of disease, as the general unthrifty appearance of the animal, loss of appetite, segregation from the herd in the morning, rough coat, and pinched squalid appearance, and this having led to a closer chest-examination, it will at once reveal the character of the disease.

The post-mortem appearances presented by this disease vary with the stage at which death has taken place. In the early stages, there is simple engorgement or hepatization of the lower part of one or both lungs; and when this diseased part is cut into, the lining membrane of the bronchial tubes will be found swollen, yellow, and everted, giving the lung the appearance of being dotted over with little abscesses. A little later, the hepatization becomes marbled in appearance; still later, the circulation of blood and the passage of air are entirely cut off, the diseased part dies and is surrounded by a cyst of living but abnormal lung-tissue. Becoming separated from this gradually, it floats often entirely free, although sometimes the connection between the isolated mass and the living lung is not wholly severed at the stage at which the examination is made. These isolated and floating masses are of very various sizes, some being no larger than an orange, while others are of the capacity of a half-gallon measure.

The progress of the disease is marked by a softening of these floating masses. In favorable cases the pus is discharged and the cavity heals up. Some suppose that the pus is absorbed, but cases have been seen where the cavity communicated with one or more bronchial tubes, making it certain that they are at least one of the natural outlets for the fluid product of the diseased lung, and perhaps the only channel through which it passes off.

The various methods of treatment followed should be such as to coincide with the general laws of therapeutics and hygiene. As a prophylactic, inoculation of the tail of healthy animals with matter taken from diseased lungs in the second stage of the disease, has been very successfully practiced in Europe. The animals which have been properly inoculated, exhibit certain characteristic symptoms, and frequently lose part of the tail, but almost always recover and are then free from danger.

The foregoing brief view of this terrible malady will, I hope, be sufficient to awaken the attention of physicians to a subject of so much importance. J. H. KLIPPART.

PART III.—FOREIGN SELECTIONS.

DIABETES MELLITUS.

BY DR. RUD. LEUBUSCHER.

[Translated from *Virchow's Archives*, for the Columbus Review, by C. E. BOYLE, M.D.]

THE following case, which I observed in my clinic at Jena, presents several interesting points in regard to the history and pathology of Diabetes.

Anna Stein, æt. 19, received in the hospital May 16, 1858. This is one of seven cases of diabetes which I have had in the past six years, occurring in females, which would seem to indicate that this disease is more common among women than is generally supposed. The patient was a delicate, slightly formed girl, with but moderate intellectual development, and was said to have experienced for a number of years great lassitude and thirst. Beyond ordinary colds, she did not remember any previous attack of sickness. The examination at the time the patient was received, revealed a narrow chest, dulness upon percussion over the right subclavicular region, hurried respiration, enlargement of the liver, lassitude, dry skin, thirst, hunger, and a disposition to sleep.

The quantity of bright-yellow urine averaged from 13 to 18 pints in 24 hours, having a specific gravity, at different times, of 1.030—1.035—1039.—1.044; the average quantity of sugar was two per cent., but sometimes was as high as 12 to 14; chloride of sodium averaged 0.18—0.44 per cent.; urea 0.4—1.6 per cent.

At my request, Dr. Passauer subjected the patient to a series of experiments in order to determine the influence of different articles of food upon the excretion of sugar, urea, and chloride of sodium. These experiments were instituted with the necessary care, such as an examination of the urine at different times during the day, seclusion of the patient, weighing of the food and drinks, and have been, in part, reported in an inaugural address delivered by Dr. P. at Berlin. I shall confine myself, therefore, to a concise description of their results.

1. The temperature of the skin, during the entire time the patient remained under this regimen, was only 35° C.; and even under the influence of acute disease, it only arose one degree higher. The nature of the diet seemed to affect the temperature of the body much less than the varying warmth of the room.

2. The quantity of urine secreted did not correspond with the amount of fluids taken by the patient; at times the former exceeding the latter.

3. Upon using a mixed diet (substances containing starch, however, predominating), with a free use of water, the quantity of chloride of sodium and urea exceeded considerably their normal proportions. At such times the urine also contained large quantities of sugar.

4. Animal diet predominating, the secretion of urea was increased› sugar diminished, with no essential difference in the quantity of chloride of sodium.

5. Copious use of milk, with a mixed diet, produced no change in the relative quantities of urea, sugar, and chloride of sodium.

6. With the use of alcoholic drinks and proteinaceous food, the quantity of sugar excreted was considerably increased; urea was diminished; and chloride of sodium remained about the same. Dr. Rosenstein (Virchow's Archives, vol. xiii., p. 479) obtained a similar result, but remarks that the quantity of sugar became relatively smaller, as the strength of the alcoholic stimulant was increased. In our case the opposite effect was produced.

In all such experiments, however, one great difficulty arises, which unfortunately cannot be avoided, and which no doubt interferes with accuracy in results. I refer to the compulsion necessary to keep a person under proper control, and which, in uneducated people, leads to opposition, deception and evasion. Even in those favorably disposed, a mental tension and excitement may be produced, which will easily interfere with the secretions.

A second series of experiments was instituted to determine the influence of medicines. During this time the patient received a mixed diet, containing an abundant supply of animal matter, and three-fourths of a quart of brown beer daily, but she was not kept under strict surveillance; hence the quantity of fluids taken could no longer be determined with accuracy.

7. Iron. This was administered in the form of lactate of iron, and given in quantities of from 4 to 6 grs. daily, from the middle of November to the middle of December. Examinations of the urine showed that sugar was present in medium quantity, and that there was no variation in the amount of urea or chloride of sodium. The general condition of the patient was good.

8. Pepsin. 10 grs. daily were given from the middle of December to the first of January. During this period the quantity of urine was diminished, its specific gravity being increased to 1.044. The proportions of sugar, urea, and chloride of sodium were relatively and absolutely increased. The general health remained uninterruptedly good.

9. Benzoin—in the form of benzoic acid, benzoate of ammonia, and benzoate of soda—was given from the middle of January to the middle of February, in daily doses of from 6 to 8 grs. This had no decided influence upon the relative quantities of chloride of sodium and urea, but the amount of sugar was somewhat diminished.

The object of the administration of benzoic was its conversion into hippuric acid. As the investigations of Kuhne and Hallwachs have established the fact, that the formation of hippuric acid is brought about by the union of benzoic acid with the glycin of the glycocholic acid in the liver, the non-occurrence of this formation is to be considered as evidence of a deficient formation of glycin in the liver, although Liebig and Lehman have discovered the presence of hippuric acid in diabetic patients, without the administration of benzoin. It is true that the experiments conducted in the laboratory of Prof. Ludwig, and continued during six days, did not reveal the existence of hippuric acid, but this was probably owing to the defective method adopted, as he neglected, after evaporation of the urine, to neutralize it. Afterward, when the evaporated urine of a diabetic patient was carefully neutralized with milk of lime, then treated with hydrochloric acid (or oxalic acid) repeatedly shaken with ether and alcohol, and the remainder, after spontaneous evaporation, washed with boiling water (according to Hoppe's method), crystals of hippuric acid were repeatedly discovered, from which we may conclude that in diabetes the transformation of benzoic into hippuric acid does occur.

The general condition of the patient during all these experiments, which were continued to the end of March, was very good, her health being only temporarily impaired by a furuncle, which, upon being opened, discharged laudable pus and healthy blood. At the end of March she suffered violent mental disturbance, and after having exposed herself to the cold, was, on the 29th, attacked with rigors and vomiting, complaining at the same time of intense pain in the head and difficulty in breathing. A mustard-plaster gave temporary relief. The next morning, the skin was cool and dry; tongue dry and covered with a yellow coat; pulse 132, small and tense; respiration 36. The posterior and inferior portions of the lungs revealed dulness on percussion, and an indistinct respiratory murmur. Above the spine of the scapula on the right side, bronchial respiration was distinct; no cough, nor expectoration; abdomen sensitive to the touch and tympanitic; bowels confined; gave an infusion of Rhamnus, which produced a semi-fluid evacuation.

During March 30th (within 24 hours), the quantity of urine passed was only six and a half pints; its specific gravity 1.020, and contained sugar 3.366, chloride of sodium 0.300, urea 1.700 per cent.; and upon the application of heat or nitric acid, precipitated a large quantity of albumen. Treatment—infusion of digitalis, one scruple to four ounces, with laurel water, and cold applications to the head.

March 31st. Pain in the head diminished, pulse frequent and small, respiration difficult, skin cool and dry, with an inclination to sleep. Discontinued the use of digitalis, as in the course of the day vomiting occured several times. Directed an enema, which produced a copious semi-fluid evacuation, and had the patient sponged off with tepid vinegar. Administered internally muriatic acid in oatmeal mucilage, which was soon discontinued, in consequence of vomiting.

April 1st. All the symptoms aggravated with more prostration, and the patient died during the night. The urine, which could be but imperfectly collected during the last 36 hours, contained a large amount of albumen. Its specific gravity was 1.020, and it contained 4.06 per cent. of sugar, 0.180 of chloride of sodium, and 1.200 of urea. The symptoms at the time death occurred, indicated cerebral poisoning. As is sometimes witnessed in other vitiated conditions of the system, we concluded that under the favoring influence of some acute local affection (in this case increasing affection of the lungs), a metamorphosis, peculiarly injurious to the nervous system, had taken place.

The rapidly increasing frequency of the pulse was striking, and contrasted with the diminished temperature of the skin. This, if it be allowable to draw an inference of a practical character in the premises, indicated an increased activity in the sympathetic system of nerves, and a proportionate impairment of the cerebro-spinal system. Other observers (Lomnitz and Rosenstein) have, on the other hand, asserted, that in intercurrent affections in diabetes, the temperature of the body reaches a much higher degree than in non-diabetic patients, while in ordinary conditions it was also observed to sink below the normal standard.

The occurrence of vomiting, and the subsequent somnolence, indicated intoxication consequent upon changes in the blood. This conclusion was strengthened by the changes which occurred in the constituents of the urine, its diminished specific gravity, increased quantity of albumen, diminution of sugar, and increase of urea.

The post-mortem examination, 12 hours after death, revealed abnormal conditions sufficient to account for the death of the patient. The most important only of these will be given:

HEAD.—Upon opening the skull a fluid, resembling an emulsion, flowed from the several vessels, particularly the longitudinal sinus, in which coagula of blood were found; the veins, particularly over the right himisphere, were filled with a whitish fluid, which seemingly glistened through the walls; the membranes were slightly thickened, adherent on the right side, but elevated on the left by a fluid exudation; no effusion in the ventricles; the substance of the brain was firm and looked well, with the exception of the superficial corticle structure, which was softened.

HEART.—Small quantity of serum in the pericardium; the heart small, flabby, the left ventricle hypertrophied; the cavities contained a red, frothy fluid, and milky coagula with granular surfaces.

LUNGS.—At the apex of the right lung a cavity, the size of a walnut, was found, with tubercular depositions in the neighboring tissue; the inferior and posterior portions of both lungs were hepatized and œdematous.

ABDOMEN.—A considerable quantity of fatty matter was found in the abdominal walls and the omentum; the left lobe of the liver reached to the left hpyochondrium; its entire weight was four pounds› its substance pale, and the larger vessels discharged a clear fluid blood. In the parenchyma were numerous yellowish-white patches infiltrated with fat. The gall was dark-green and fluid. The mucous membrane of the stomach and the small intestines, as far as the ileo-cæcal valve, was hyperæmic, covered with mucus and blood effused from the capillaries. After washing it off, the villi of the mucous membrane could be seen with the naked eye, the whole surface looking as if it had been sprinkled with fine flour, the microscope revealing that the villi were filled with minute fat-globules. The mesenteric glands were of a whitish color, somewhat enlarged and infiltrated, the microscope showing them also to contain considerable fat. The spleen was small and withered. The kidneys were enlarged, firm, and badly supplied with blood.

BLOOD.—An examination of the blood with the microscope revealed a large quantity of free fat and white corpuscles. After the coagulable parts were separated by boiling, a considerable quantity of sugar was shown to exist in the filtered serum, both by Trommer's test and by fermentation. Urea was also present even in a portion from which $S.\,O.^3$ and $P.\,O.^3$ had been removed by barytes, precipitated with a solution of fluid nitrate of mercury; and in another portion, nitrate of urea appeared upon the addition of $N.\,O.^5$ A portion of the white fluid of the blood, which stood above the red blood in a test-tube, was agitated with ether, and almost entirely dissolved. After evaporation of the ether, there remained cholesterine, margarine, and leucine. In that portion of the blood which had been deprived of its coloring matter and which was neutral in reaction, the presence of free ammonia could not be detected. The filtered portion of the expressed hepatic fluid contained large quantities of sugar. The foregoing bears a strong resemblance to those cases of diabetes already reported, in which milky blood occurred, and also where unknown processes prevented the transformation of fat and sugar (Virchow, Gesammelte Abhandlungen, p. 140). Death occurred during an increase of the lung-affection, complicated with gastro-intestinal inflammation, both of which, most probably, tended to increase the changes in the blood.

But if the diseased lungs and enteric mucous membrane aided in the metamorphosis of the blood, it is certain they were not its only cause. The violent mental disturbance and exposure to cold could, independently of these, have produced these changes; indeed, in dyscrasy generally, slight causes may produce the most extensive transformations in the blood.

OBLITERATION OF A LARGE ORBITAL NÆVUS BY LIGATURE.—A child, six months old, was lately under the care of Mr. Price, at the Great Northern Hospital, on account of a large-sized nævus, occupying the inner margin of the orbit, partly occluding the left eye, and spreading over the brow. The pulsating tumor had, at another institution, been constantly injected with the perchloride of iron; but instead of decreasing in dimension, it grew considerably. One or two subcutaneous ligatures were made tightly to encircle the base of the tumor, and at the end of three weeks, after considerable obliteration had taken place, the great bulk of the nævus was tied, and allowed to slough away. All appearance of vascular stricture has now disappeared, and the infant has obtained perfect use of the eye.—*London Lancet.*

EXTRAORDINARY FECUNDITY.—Louisa Leig of Rasanam, near Huninguen, on the Rhine, in France, was delivered, on the 16th and 18th of May last, of two robust boys, and on the 22d of two more boys. The mother and the two first born are well, but the two last born did not live.

DIPHTHERIA.—Dr. Crighton, Edinburgh, records the results of 45 cases of diphtheria occurring in his practice. Out of this number 7 proved fatal, or 1 in 5: of these 6 died of asphyxia, with membraneous exudation in the air-passages; the other by pure asthenia. The mean age of the fatal cases was about 7 years.

PART IV.—BI-MONTHLY ABSTRACT.

SURGERY.

NEW OPERATION FOR KNOCK-KNEES.

BY A. G. WALTER, M.D., PITTSBURGH, PA.

In the Philad'a Med. and Surg. Reporter for July 21, 1860, Dr. Walter gives a detailed account of a new operation for the relief of "knock-knees." Dr. W. states that this deformity is caused "by the yielding of the fibrous and muscular apparatus of the inside of the knee-joint under the weight of the body, in consequence of the impaired innervation of the muscles of the limbs," and that "during the attempt of forcing the limb into its natural position," the tendon of the biceps femoris, which is inserted into the head of the fibula, is in a state of "structural tension." The operation consists in a subcutaneous division of the tendon of the biceps muscle near its insertion, and the application of a supporting apparatus, which requires to be worn for a short time. "The articulating surfaces being but slightly, if at all, altered, and structural contraction overcome once by tenotomy, the joint becomes restored to its natural position and remains normal."

Four successful cases are reported, two of which we add:

"Walter Pope, 4 years of age, of Pittsburgh, was born well formed and healthy. When one year old dentition, accompanied by diarrhœa, reduced his strength, in consequence of which lateral deviation of both knee-joints gradually and steadily took place. The upper part of his body grew naturally, the lower limbs remaining placid and diminutive.

"He is tolerably active, still falls frequently, both knee-joints touching each other, while the feet are widely separated, the patient resting on the inside of the foot, with the toes pointing outwards. The deformity is very great; the deviation of the crus from the natural line of the femur amounts to some seven inches. There is a semi-rotation outward of the head of the tibia, occasioned by the contraction of the tendo bicipit. femoris. On flexing the knee-joint the deformity disappears, but returns on extending it. The natural line of the tibia, also, has diverged from a concave to a convex one, the curvature being outward and somewhat forward. On October 6th, 1858, assisted by Dr. Henderson, the tendon of the biceps femoris was subcutaneously divided above its insertion into the fibula, the patient being under the influence of sulph. ether, and a tin splint, well padded, and hollow to fit the leg, laid upon the outside of the whole limb, confined by a roller from below upwards. No fever followed. The extension of the joint being daily increased, the patient, a few weeks after, began to stand upon his limbs. A few weeks later walking was commenced, with the knees still supported in the extended position. An orthopædical apparatus was then attached to his shoes, with a joint at the knee, resting upon the outside of the limb, by which the latter were kept in their restored positions. The boy rapidly gained strength, and was able, in six months, to walk without any support, which had been left off by his parents, the deformity not having reappeared at the present date.

"Peter McCoy, a lad of 16 years of age, of Alleghany city, born healthy. Contracted measles, followed by whooping cough, when three years of age, which reduced him greatly, and prevented locomotion for some time. Some months later he began to walk, when lateral deviation of the knee-joints inwards took place, and gradually increased. The knees touched each other, the feet were widely separated, and the toes everted. The shaft of the tibia, also, bent inwards and forwards under the weight of the body. Various were the appliances tried by his physicians without avail. Tenotomy of the biceps femoris, above the fibula, was made on November 12th, 1858. A hollow tin splint was applied to the limb, and the gradual extension of the joint commenced a few days after. The deformity yielded gradually to the extending force, and was relieved at the expiration of three weeks. The boy began to stand upon his feet and walk with stiff knees for a few weeks, when the orthopædical apparatus was attached to his limbs, allowing him full freedom of motion. This was worn for a year, and then left off, the deformity not reappearing. The muscles of the crus, before flaccid, have regained their natural fullness; even the shaft of the tibia having perceptibly returned to its natural line."

AMPUTATION OF FOREARM—ACUPRESSURE.

THE patient on whom Simpson's method of controlling hemorrhage by acupressure, was first practiced in the New York Hospital, was a healthy young man, aged 23 years, who had received a short time prior to his admisson (March 16th, 1860), a severe compound fracture of the left metacarpus with considerable laceration of the soft parts, which had been produced by his becoming caught in some machinery. An attempt was made to save the ulnar portion of the hand, where was the least amount of injury, but this, however, failed, the fingers spacelating. The wound was then left to digest, and attention was directed towards improving his general condition in reference to a secondary amputation, which was performed April 26th, by Dr. Van Buren, at the junction of the lower and middle thirds of the forearm; the tissues of which were much thickened and œdematous. The method of anterior and posterior flaps of integument with circular division of muscles, etc., by successive incisions, was adopted; the tendons also were drawn out of their sheaths to a moderate extent, and cut off to prevent interference with primary union, in the manner advised by Mr. H. Croskery, in *Med. Times and Gazette*, vol. i., p. 86. Three common Berlin wire wove pins, about two and a half inches in length, and similar to shawl pins, were used; one each, for the radial, ulnar, and interosseous arteries, the latter being secured by a needle passed directly through the interosseous space, but not appearing in the face of the stump, and compressing the vessel against the outer border of the radius; the other arteries being secured. The extremities of each needle being in the cutaneous surface of the palmar flap as the stem of a flower is fastened to the lapel of a coat. No ligatures were applied, and the stump was closed by seven silver wire sutures; some slight oozing occurred the same evening from the outer angle of the wound, but ceased spontaneously. Forty-eight hours after the operation, but moderate swelling having ensued, the needles were carefully withdrawn, and on the eighth day the sutures were also removed; union by first intention having taken place throughout the deeper portions of the stump, and but a slight linear ulceration being visible at its periphery. This speedily cicatrized, and the patient was discharged from the hospital May 19th.—*Am. Med. Times.*

MISCELLANEOUS.

THE REVIEW will be sent this month to a large number of physicians throughout this and other States. We invite those who, after a perusal, may think it worthy of their support to forward their names and subscriptions without delay, as after the second number none but bona fide subscribers will receive it.

THE STATE MEDICAL SOCIETY OF OHIO, held its meeting this year at the White Sulphur Springs, Delaware county, on the second Tuesday of June. The attendance was larger than for years past, and a marked degree of harmony characterized the transaction of the business of the Society. The papers read were of an interesting and meritorious nature, and will make a valuable volume of transactions.

The next meeting will be held at the same place, on the second Tuesday of June, 1861, when we hope to meet a still larger representation of our professional brethren.

VIVE LA HUMBUG!—The three *progressive* old gentlemen whom His Excellency, Gov. Dennison, mistook for judicious men, and made of them *rulers* over the Ohio Penitentiary, have recently removed a regular physician, who for years past has done honor to himself and successful service to the prisoners in the hospital of that Institution, to make way for a so-called homeopathic *doctor!*

THE AMERICAN MEDICAL ASSOCIATION held its 13th annual meeting on the first Monday of June last at New Haven, Connecticut. The attendance was large, nearly five hundred delegates being present, representing almost every State in the Union. The proceedings were interesting and dignified, and will no doubt have a good effect. The profession and citizens of New Haven gave the members a generous welcome and entertained them in a handsome manner.

The next annual meeting will be held at Chicago, Illinois.

IMPORTANT DECISION.—At a recent trial in the Muskingum county Common Pleas, the question arose as to the power of court to compel a medical witness to give testimony involving a breach of professional confidence. After being fully argued, the Court (Judge Marsh presiding) held that a medical witness could not be compelled to disclose facts confided to him in confidence, in his professional capacity. Although the statute only expressly exempts priests and lawyers from giving such testimony, we think the decision of Judge Marsh just.

One of the counsel (Judge Thurman of our city) has promised us an extended report of the points in his argument, and the decision of the Judge, which we hope to lay before our readers in our next number.

TEMPERATURE OF THE ARTESIAN WELL AT COLUMBUS, O.—A few days since a Walferdin's registering thermometer, completely inclosed in glass and iron tubes, containing water, was sunk by Professor Wormley to a depth of 2,575 feet, where it was allowed to remain for 25 hours; it was then lowered to the bottom of the well (2,575 feet), and there remained 40 minutes. Upon withdrawing the thermometer, it was found to have registered 88 deg. Fahrenheit, which may be considered the temperature of the well at that depth. We extract from the *Ohio State Journal*, to which we are indebted for the above facts, the following:

"In Paris, at a depth of 90 feet, a thermometer has continued without variation at a temperature of 53 deg. Fahrenheit for nearly two centuries. Taking this as correct, the increase of temperature below this point of constant temperature, would be, according to Professor Wormley's experiment, 1 deg. for every seventy-one feet.

"Many observations have been made in regard to the temperature of mines and wells, and they all show an increase of heat as we descend below the surface. There is, however, much discrepancy as to the ratio of increase.

"The mean rate of increase, from results obtained in six of the deepest coal mines in Durham and Northumberland is 1 deg. for every forty-four feet. Observations in several of the lead and silver mines of Saxony gave 1 deg. for every sixty-five feet. The increase observed in sinking the Grenelle well at Paris was 1 deg. for fifty-eight feet. In the Artesian well at Mondorf, on the frontier of France and Luxembourg, the water, at a depth of two thousand two hundred feet, had a temperature of 93 deg. Fahrenheit, showing an increase of 1 deg. for fifty-four feet. The Artesian well at Louisville, Kentucky, at a depth of two thousand and eighty-six feet, showed a temperature of 82½ deg. Fahrenheit, being an increase of 1 deg. for every sixty-seven feet.

"From the above reports it would appear that the temperature below Columbus, did not increase as rapidly as in most other places where observations have been made."

Died, in this city, on July 2d, 1860, of encephaloid cancer, Dr. George J. Sachse, aged 60 years.

Dr. Sachse was born in March, 1800, at Neuenhaus, a town of Westphalia. His preparatory medical studies were pursued under the direction of Dr. Guerson, a distinguished physician of Hamburg, upon whose hospital service he attended.

He was matriculated as a regular student of medicine, in June, 1827, at the University of Heidelberg, where, among other celebrated preceptors of that venerable school, he profited by the prelections of Tudeman, Gmelin, and Chelius.

On the 30th of December, 1830, after the usual rigorous examination of the German schools, he received his degree as "Dr. Med. Chirurgiæ et artis obstetriciæ, *cum laude superato.*" Soon after leaving the University, he enlisted in the cause of Poland, then making her last struggle to regain her liberties. As surgeon to a company of brave young Germans who tendered their arms and sympathies to the Poles, he endured with them the toils and privations of that hard campaign, and suffered with them in the sad defeat that followed. With others he was taken prisoner, subjected to the cruelties of a triumphant despotism, and when set at liberty, excluded from all the privileges of the Russian amnesty, granted to political offenders. This determined him to seek a country more congenial to his liberal views, and he turned his face to *this*, as the land of his future adoption. On his way to Warsaw, preparatory to leaving the heavy shadow of Russian tyranny, the Asiatic cholera making its appearance at Kolo, a city of Poland, he was urgently solicited by the officials and citizens to postpone his journey, that he might bestow his professional services on the sufferers of that city and neighborhood. In the official record and certificate of this service, before us, it is stated that he "performed this sacred, philanthropic duty with the greatest ardor, with great sacrifice of his own health and comfort, and with the very best success, and that many, many hearts of that affected district bless him."

He went thence to Warsaw, and after receiving there honorable testimonials, sought for a second fatherland, in a country where it was not treason to sympathize with the oppressed. He landed at New York, at once linking himself with the profession of the country, by becoming a member of the city and county medical society, and shortly after removed to Western Pennsylvania, where he practiced medicine in and near Pittsburgh. From Pittsburgh he came to Lancaster, Ohio, where he secured a large practice, especially in surgery, being a pioneer in some important operations. By his honorable bearing he secured the warm esteem of his professional brethren. In 1849 he removed to Columbus, where he resided until his death. This brief review presents a life sufficiently varied and trying to test the genuineness of character. All who knew him will accept the assay. The metal came bright from the furnace, ready to receive, of heaven and good men, the authorized stamp that gave it currency. None ever doubted its value.

The generous sympathy and self-sacrificing zeal that prompted him in early professional life to espouse the cause of a crushed people, struggling to regain liberty, and a place in national rank, were but modes of expressing traits that were the very fibre of his life. Generous, humane, chivalrous, he gave to all the quiet, unnoted events of a physician's life, the charm of these beautiful qualities. To his profession he proffered a devotion that would do honor to knighthood in its purest and brightest days. In social life none knew him but to love and trust him. For our profession's sake may he have many successors.

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W. L. McMILLEN, M.D.,
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THE

COLUMBUS REVIEW.

OCTOBER, 1860.

PART I.—REVIEWS.

WINSLOW ON THE BRAIN.

On obscure Diseases of the Brain and Disorders of the Mind, their Incipient Symptoms, Pathology, Diagnosis, Treatment and Prophylaxis. By FORBES WINSLOW, M.D., D.C.L., Oxon., etc., etc. Philadelphia: Blanchard & Lea, 1860.

THE general principles upon which this work is based, will be understood from a consideration of the following passage:

> "The brain, being the material instrument of the intelligence, the physical media through which the mind manifests its varied powers, it is in conformity with the rules of logic, and, in obedience to the laws of inductive reasoning, to infer that no changes in its structure or investing membranes can take place, no alteration in the quality of the vital fluid, or anatomical character or calibre of the numerous blood-vessels that circulate and ramify through its substance, can exist, without to some extent interfering with or modifying its *psychical* functions. Cases, however, are on record, in which serious injury has been done to the brain during life without damaging the intelligence, and considerable encephalic disorganization (as the result of disease) has taken place, no aberation, exaltation, depression, or impairment of the mind having been observed, previously to death. If such cases have occurred, they must be considered either of a rare and exceptional character, or, as pathological curiosities, unless in every instance, the alteration of structure is strictly confined to one hemisphere, or restricted to the fibrous or *conducting* part of the nervous structure, the *vesicular* matter and its minute vessels remaining intact and entirely free from all mor-

bid change or abnormal modification. Is it possible to conceive any great extent of disorganization, even in the medullary portion of the cerebral mass to exist, without implicating, to some degree, the gray matter of the brain, and as a consequence, deranging the phenomena of thought?

"It is not my intention to discuss in this work the complex questions (physiological and metaphysical) involved in an analysis of the psycho-somatic relation, or union between mind and matter, life and organization. It is sufficient for my purpose to affirm, as a general *postulate*, that all structural lesions of the encephalon, its investing membranes and blood-vessels, are associated with some derangement, modification or altered action of the *psychical*, *motorial* or *sensorial* functions of the great ganglion, the *sensorium commune*." (pp. 35–6.)

There can be no question but that a healthy state of the brain and its appendages is a necessary condition precedent to healthy thought, and that a pathological condition of any portion thereof, must impede or in some way modify the ordinary mental manifestations. But it by no means follows, that the mental disorder observes a uniform proportion to the amount of disease sustained by the cerebral organs. A slight cerebral lesion apparently effects the subversion of mental soundness in one person, while in another the result is a comparatively trivial disturbance. Something must be due to the power of resistance, inherent or acquired by the individual, whereby the effects of an abnormal condition of the brain may be antagonized, more or less completely. The force or vigor of the mind itself has, in all probability, much to do with this power. This inequality is very often seen in the various degrees of completeness with which the incipient symptoms of brain disease are repressed by different individuals, and adds very materially to the difficulties in arriving at a correct diagnosis, and especially in estimating the probabilities of the prognosis. Far less extensive lesion of the brain than the autopsy of Daniel Webster revealed, as the result of an accident some months before death, has overthrown the controlling power of the judgment, yet it does not appear to have produced any mental obliquity on the part of that great mind. It is important, therefore, to bear in mind the truth expressed in the homely verse of Cowper:

> "The kick that scarce would move a horse
> May kill a sound divine."

The abnormal condition of one man's brain may be repressed by the vigor of his mind, so that little or no sign is made of its existence, while another, with the same amount of disease, is impelled to such a course of thought and action, as leads his friends to seek, for his benefit, the refuge of an asylum. This, then, forms an element, and a very important one, in the diagnosis of mental disease, especially it its early stages. It constitutes, in part, what may be termed the mental constitution.

Every pathological change within the cranium, as we have seen, may induce more or less departure, according to this mental constitution, from a proper display of the psychical-somatic functions. From both sources, slight, but important information can be gleaned. In the one case the mental, and in the other the somatic symptoms, will be the more prominent, and perhaps, in a third, the two may be more equally blended; yet in all three cases, no one symptom may be very conspicuous, perhaps even the aggregate of them all may not seem very weighty. To mark these slight shades which pass over the mind, to estimate their importance and to guard against their effects before the storm gathers too thickly, become most important duties of the physician. Yet few are so often neglected or evaded. Several reasons might be given why this is so. It is comparatively easy to detect the minutest deviations from the healthy sounds of the lungs and the heart. Constant practice enables the dullest ear to surmount all obstacles to success. There is a standard of comparison for the ear tolerably accurate and of easy reference, and when a notion is acquired of the normal sounds to be heard, the rest of the task is not difficult. In those diseases whose very existence, as well as their progress and extent, are to be estimated by mental manifestations, aided in a very slight degree by the physical symptoms which a careful scrutiny—and a careful scrutiny only—may detect, what fixed standard of comparison can be found? In some cases, common experience would at once indicate certain acts or thoughts as the results of disease, and little care is required in such inquiries. But in numerous other cases, before we can ascertain that a departure from a healthy condition exists and the extent of that departure, we have first of all to estimate for ourselves the healthy condition itself, in that particular individual, and to project, as well as we can, an ideal standard to represent his normal mental state by which to compare the acts and thoughts upon which our opinion has been sought. The difficulties in such an investigation are sufficiently apparent, and it is no wonder that departures from mental health are so often overlooked, until the widening interval has already become palpable and distinct. Yet every day's experience admonishes how rapidly mental disease advances and acquires redoubled force as it proceeds; how hopeless in many cases becomes the task to arrest its progress, when it has thus acquired force and impulse. The traveler on the mountain passes of the Alps detaches the snow with his foot; if it form a little ball and begin to roll, the careful guide stops its progress, for, though a little ball now, yet if suffered to roll down the snowy sides of the mountain, gathering to itself snow as it rolls, it will increase with fearful rapidity until it shall become an avalanche, which may overwhelm whole villages in its destructive course. If any one think this comparison overdrawn, let him carefully study the causes which have laid some of the noblest minds in ruins—how stealthily they have advanced, until sure of their victim, and then how surely they have trampled upon him. Passing by Cowper, whose life was one continual April day of stormy clouds, relieved by brief fitful sunshine, and poor Collins, howling like a dog in Chichester Cathedral at the sound of the solemn music, let him pause to consider the last days of Shenstone, of whom Dr. Johnson so forcibly remarks, "His death was probably hastened by his anxieties. He was a lamp that spent his oil in blazing." Let him study the train of causes which led Chatterton, Lord Castlereagh, Sir Samuel Romilly, Whitebread, Haydon, Hugh Miller, and Addison, and alas! many more equally gifted, to self-destruction—which sent the poets Lee and Clare, and our own Hoffman, to pass the majority of their days in hospitals for the insane; which, without dimming the glorious intellect of Percival, isolated him from his fellow-men, and made him alone, apart, solitary in the world; which cut off Southey from the consolations of the library in which he loved to linger, long after his brain was incapable of receiving any correct impressions; which softened the noble brain of the genial and brilliant Walter Scott; which made Swift, in his declining years, a driveling idiot; and which subdued Clive, the conqueror of many a well contested field, the hero of Plassy, the founder of the Anglo-Indian empire in the East. Nor let him neglect a thorough investigation of the almost life-long struggle the late Professor Horner carried on against the enemy within—an enemy which darkened all his prospects, infused subtle poisons into all his enjoyments, and rendered what was apparently a brilliant career one of unmitigated and almost unceasing mental torture. If from these more marked cases he turn to consider the large number of those in less prominent positions in life, exposed to the same influences and gradually yielding to the same undermining agencies, he will have some idea of the immense extent of slight forms of brain-disease, and also of the insidious, stealthy, yet sure modes of conquest it adopts. Dr. Winslow, therefore, renders good service in calling the attention of the profession to this class of diseases, in the able and elaborate work before us. For such a task his opportunities, well improved as they have been, have amply qualified him. His extensive practice among the insane and those mentally afflicted, his able Monograph upon Suicide and other works, above all, his articles upon various topics connected with mental disease, in the "Psychological Journal," and his prudent and able conduct of that journal as its editor, raise the expectations of his readers to a very high pitch. A careful perusal of this work will not disappoint such expectations, for in no other work in our language can be found such minute yet comprehensive descriptions of the incipient stages of disease characterized by mental unsoundness or such clear views of the exact significance to be attached to mental symptoms, in cerebral disease in general. A careful consideration of the numerous facts, so well collated and grouped together by Dr. Winslow, will demonstrate the necessity of detecting these early symptoms, both from the comparative ease with which they can be combatted, and from the hopeless state which usually follows their neglect.

The subjects comprised in the book before us, are arranged under the following general divisions:

1. Morbid phenomena of intelligence.
2. Morbid states of motion.
3. Morbid conditions of sensation.
4. Morbid phenomena of special senses.
5. Morbid phenomena of sleep and dreaming.
6. Morbid phenomena of organic and nutritive Life.
7. The general principles of Pathology—Treatment and prophylaxis of obscure diseases of the Brain.

The first division naturally occupies by far the greater space in the volume. The intelligence may exhibit disease by being in a state of morbid—1. *Exaltation;* 2. *Depression;* 3. *Aberration;* or 4. *Impairment*, and in each the disorder may range from a very slight to an excessive degree. Certain cases, however, wherein the intelligence is at fault, cannot be properly included within the above division. They are disposed of by Dr. Winslow under the heads of "*Anomalous and masked affections of the Mind,*" and that stage of mental unsoundness characterized by a consciousness of the fact, or, as he terms it, the *stage of consciousness.*

Before entering upon the discussion of these topics, our author endeavors to arrive at some conclusion respecting the precise nature and phenomena of morbid thought and acts. In this investigation, which forms a sort of episode to the main subject, he enters upon the analogy existing in many respects between the phenomena of insanity and dreaming, and gives us the supposed morbid phenomena of thought during the state of transition to and convalescence from attacks of insanity. Some of the earlier reports of the Ohio Lunatic Asylum, when Dr. Awl's graphic sketches of insane life and thought first awakened an interest in that unfortunate class in this community, have been laid under contribution to furnish descriptions by patients after recovery of their morbid feelings during the earlier and later phases of their disease. The most interesting case quoted by Dr. Winslow, however, is that of Rev. Mr. Walford, who, evidently a man of culture, was enabled to analyze his own feelings, and conduct more accurately than those less accustomed to rigid mental analysis. At the best, however, this source of evidence must always be a suspicious one, and such descriptions require to be received with many grains of allowance.

Among the *anomalous and masked affections of the Mind*, Dr. Winslow includes the insanity of early life, and shows that mental disease is undoubtedly more frequent in children than is generally supposed. In a very large proportion of cases, however, it is associated with well marked hereditary tendencies to insanity. Thus, in the cases of Dr. Brierre du Boismont, of 42 young people in whom insanity was developed, 18 inherited from parents, and in far the greater number there was hereditary predisposition.

The age of puberty and menstruation seems to be especially liable to an attack. Indeed, this connection between the appearance of the first catamenia and the occurrence of mania was pointed out by Hippocrates.

The early periods of mental unsoundness, in which gradual transformation of character takes place almost imperceptibly, or a morbid exaggeration and excess in the development of ordinary mental phenomena are the principal symptoms, deserve the especial attention of physicians. A more serious matter to be consulted upon, we do not know; yet it is so often merely pooh-poohed. "How much," remarks Dr. Winslow, "of the bitterness, misery and wretchedness, so often witnessed in the bosom of families, arises from concealed and undetected mental alienation! How often do we witness ruin, beggary, disgrace and death result from such unrecognized morbid mental conditions!" They may more or less involve the affections, propensities, appetites and moral sense. They are occasionally, says Dr. Winslow—most frequently we would say—the sequelæ of febrile attacks, more or less implicating the functions of the brain and nervous system. They also often follow injuries of the head inflicted in early childhood. "Modifications of the malady are unhappily seen allied with genius. The biographies of Cowper, Burns, Byron, Johnson, Pope and Haydon, establish that the best, exalted and most gifted conditions of mind do not escape unscathed."

Dr. Marshall Hall described a species of mental aberration peculiar to young females, characterized as by extraordinary perversions of the temper of the patient, to which he gave the name of "temper disease." Dr. Winslow thinks this affection is not confined to females, and gives several instances occurring in males. Among others, the celebrated Spanish general Galvez was subject to periodical attacks of this nature. A bottle of claret usually cured him, probably, as Dr. Rush observes, by overcoming a weak, morbid cerebral action, and producing an agreeable excitement of brain.

The mental condition referred to in the following passage is unhappily met with more frequently than its true character is recognized:

> "I have referred to a certain morbid mental condition, exhibiting itself exclusively in acts of *cruelty* and *brutality.* This form of unrecognized disorder may exist unassociated with delusion. There is much of this latent and undetected alienation of mind in existence, producing within the sacred precincts of domestic life great irregularities of conduct and a fearful amount of domestic misery. It often coexists with great talents and high attainments, and is compatible with the exercise of active philanthropy and benevolence. The ordinary actions or conversation of those so affected, in many cases would not convey to a stranger an idea of the existence of such a sad state of the intellect. Howard, the celebrated philanthropist, affords an unhappy illustration of this type of disorder. He is represented to have been a tyrant in his own house. His cruel treatment caused the death of his wife. He was in the habit for many years after her death of doing penance before her picture. He had an only son whom for the slightest offense he punished with terrible severity. He was in the habit of making this son stand for hours in a prescribed grotto in the garden. The son became a lunatic, as the result of this brutal treatment. Several similar cases have been brought under my observation." (p. 157.)

We have no doubt of the existence of the pathological condition of the brain in such cases, and the majority of the instances given by Dr. Winslow carefully illustrate its influence. But the instances quoted above of the brutal conduct of John Howard do not at all assist us in coming to such conclusion, as we believe them to be utterly without foundation. The whole story is the result of the malice of those whose iniquities that great man's life was devoted to expose and frustrate, and who seized upon the terrible calamity of his son's insanity as a means of fastening odium upon him. That son became, at the age of 22, insane from the effects of vice which, during his college career, undermined his constitution. As he had been since childhood comparatively little under the personal control of his father, who was a widower from the day his son was born, and whose constant travels commenced when that son was eight years old, it is difficult to imagine how his brutality (assuming its existence) could possibly influence his life to the extent charged. One of his biographers asserts that "he seems certainly never to have allowed the pleasure of making a fellow-creature happier to have escaped him." His first wife died from the malady of which she was a confirmed invalid when he married her. His second wife died in childbirth. Doing penance before the portrait of either is not very consistent with the ideas of religious nonconformity, with which Howard was thoroughly ingrained.

It is sometimes a terrible thought how completely the human character and intellect are rendered the sport of slight physical disturbances. General Custine, who so distinguished himself at the battle of Mayence, where he rushed with dauntless courage to the mouths of the Austrian cannon, after severe bodily disease and consequent loss of nervous energy, proved himself a sad coward at the sight of the guillotine. Even the alternations of climate and weather are reflected in the various mental conditions of some. An Italian artist never could reside a winter in England without the distressing idea of suicide constantly recurring to his depressed mind. The *nostalgia* of the Swiss mountaineers naturally occurs to mind in this connection. The temporary derangements of digestion may affect the temper and the clearness of perception. Indigestion from an improper meal is said to have caused the loss of a battle. Voltaire wittily recommends those going to ask a favor of the Prime Minister, to ascertain from his *valet de chambre* whether he had had his bowels opened in the morning, so much does temper depend upon the alimentary canal.

We pass to the consideration of what our author terms the *stage of consciousness:*

> "Among the obscure and as yet inexplicable phenomena of disordered intellect, stands prominently forward a condition, incipient phase or pre-existing abnormal state, in which the patient (long before he becomes or is considered actually insane) is fully sensible, painfully, keenly and exquisitely conscious of the predominance of certain morbid and unnatural states of emotion, idea, and impulse." (p. 190.)

> "In the incipient as well as in the fully developed conditions of insanity, the instincts—the coarser parts of animal nature—make occasionally a bold, determined and vigorous effort to forcibly seize the sceptre and exercise supreme authority and despotic dominion over man's 'sovereign reason.' An awful, terrific, deadly 'hand-to-hand' struggle sometimes ensues between these antagonistic elements. 'The reason *may* resist,' says Coleridge, when referring to this appalling contest, 'it *does* resist for a long time, but too often, alas! at length it yields, and the man is mad forever!'
>
> "Bishop Butler records that he was, all his life, struggling against the horrible morbid suggestions (he termed them 'devilish)' which, he says, would have maddened him if he had relaxed the stern watchfulness of his reason for a single moment." (p. 193.)

Dr. Winslow adds several instances of this struggle to repress blasphemous, profane or obscene thoughts, or the impulse to suicide or other vicious act. The most remarkable historical case he omits, that of John Bunyan. That eminent man suffered in this way for several years. The first time he participated in the Communion it was with difficulty that he could refrain from imprecating destruction on his brethren while the cup was passing from hand to hand. Even when he had fully devoted himself to preaching, it was long before he ceased to be tormented by an impulse which urged him to utter words of horrible impiety in the pulpit. The charming "Autobiographical Recollections of the late C. R. Leslie, R.A., recently published, relate a painful but apparently temporary attack of a similar nature which occurred to the distinguished artist, Washington Allston. "When Allston," says Mr. Leslie, "was suffering extreme depression of spirits immediately after the loss of his wife, he was haunted, during sleepless nights, by horrid thoughts; and he told me that diabolical imprecations forced themselves into his mind. The distress of this to a man so sincerely religious as Allston, may be imagined. He wished to consult Coleridge, but could not summon resolution. He desired, therefore, that I would do it; and I went to Highgate, where Coleridge was at that time living with Mr. Gillman. I explained the cause of my visit and he said, 'Allston should say to himself, *Nothing is me but my will.* These thoughts, therefore, that force themselves on my mind are no part of *me*, and there can be no guilt in them. If he will make a strong effort to become indifferent to their recurrence, they will either cease, or cease to trouble him.' He said much more, but this was the substance, and after it was repeated to Allston I did not hear him again complain of the same kind of disturbance."

How many instances of apparently motiveless suicide may be attributable to this very cause!

In this stage of consciouness the patient may suffer acutely from *phantasms* concerning which his reason is not deceived. He is conscious that they depend upon a disordered state of the visual and perceptive faculties, produced perhaps by gastric or hepatic derangement, and is able to reason with himself or talk to others respecting their nature and origin. This annoyance disappears under appropriate treatment of the special malady upon which it depends.

The physical lesions associated with these peculiar mental symptoms are very various. Dr. Winslow observes:

> "The state of unhealthy feeling, previously described as often symptomatic of incipient insanity, is occasionally observed in certain anomalous conditions of the nervous system allied to hysteria, and may exist apart altogether from any actual disorder, or even a tendency to derangement of mind. These distressing nervous symptons sometimes are seen in young girls, when passing at the age of puberty into womanhood, and occur to females of mature age at the critical period of life. This morbid exaltation of the nervous and mental functions is generally found associated with visceral complications easily curable, however, in many cases by remedial measures. In some patients these symptoms are the effect of long-continued and neglected stomach and hepatic derangement. In other instances, the uterine system is the seat of the mischief; and in some types of the malady which have come under my observation, the condition of mind could be traced to irritation and congestion established in the brain itself. In one remarkable case the patient was tortured by an intense fear of losing his senses, combined with confusion of ideas, strange dislikes to his relatives, and a disposition to conceal himself from his family. He had for some time suffered from headache and a general feeling of *malaise.* This gentleman soon recovered, after a few ounces of blood were taken from his head and two or three active calomel purges administered. In less than three weeks from the time he placed

himself under my treatment, he was able to resume his ordinary occupations. In the case of a lady presenting the same symptoms, great congestion was discovered in the neighborhood of the *cervix uteri.* This morbid state of the vessels was removed by the locol application of leeches. The blood so abstracted, conjoined with other treatment, entirely relieved the mind of all fear and apprehension of insanity. In another case the mental disturbance could be clearly traced to engorgement of the liver consequent upon a long residence in a tropical climate. Calomel, taraxacum, nitro-muriatic bath, as recommended and described by Mr. Randall Martin in his able treatise, very speedily dissipated all mental despondency and morbid anxiety as to the existence and approach of mental derangement." (pp. 216–17.)

With this consciousness of the presence of certain abnormal conditions of the mind, the more terrible presentiment or dread of approaching madness is sometimes combined. "The constant dread (wrote Sir James Mackintosh to Robert Hall) which so often brings on the very evil dreaded, and which, as it clouds the whole of human life, is itself a greater calamity than any temporary disease. Some dread of this sort darkened the days of Johnson, and the fears of Rousseau seem to have constantly realized themselves." Dean Swift, not only by the terms of his will, showed how his fear possessed him, but on one occasion, after gazing in a state of abstraction at the top of a lofty elm whose head had been blasted by a hurricane, gloomily said to his friend, "I shall be like that tree, I shall die at the top first." And Sir Walter Scott, amid his almost supernatural efforts, wrote, "I do not think my head is weakened, yet a strange vascillation makes me suspect. *Is it not thus that men begin to fail*, becoming, as it were, infirm of purpose?

"'That way madness lies. Let me shun that—
No more of that.'"

This dread, it is important to remember, although often the precurser of insanity or total wreck of the mind, is sometimes associated with other curable diseases and disappears under judicious treatment.

We must now hastily glance at the divisions our author has adopted of the various affections of the intelligence;

and first of its *exaltation.* This exaltation may be twofold in its nature—1. *Psychical*; and 2. *Somatic.*

The symptoms of *psychical exaltation* may precede insanity—meningitis—or may appear during incipient stages of brain-disease of early life—during fever accelerating the cerebral circulation, and they frequently anticipate the closing scenes of tuberculosis. Among the insane, also, we often meet with exaltation of certain faculties—states of feelings and perceptions of mechanical ingenuity—an increased cunning and subtlety in persons apparently incapable of originating or appreciating a rational idea.

> "Hence we may, to a certain extent, explain the *subtle instinctive sagacity and acuteness* so frequently seen associated with the various forms of deranged mind. It would appear that in proportion as the reasoning and reflective powers are in an arrested, latent and dormant state, do the instinctive propensities (as a compensating balance) ascend the scale, occupy the seat of reason, and arrogate and exercise the right of undisputed and often unbridled sovereignty." (p. 235.)

Somatic exaltation often characterizes the incipient stages of insanity. This disturbance in the motor power may be indicated by a general muscular agitation—unnatural elevation of spirits—uneasiness at remaining long in one place or position—a tendency to rush from one place to another with little or no motive—an unsteady energy, and a desire for change very different from the usual conduct. Certain *brusqueries* of manner are observed, and sometimes this conduct gives color to a suspicion of intoxication. This course of behavior may go on increasing, until a state of maniacal excitement is established. This state is not always premonitory of insanity. It sometimes precedes an attack of apoplexy. It is observed in the brain affections of children, in some phases of typhoid fever, when great exhaustion of the nerve-force has taken place. It almost always accompanies the first stage of general paralysis. Apoplexy is not unfrequently preceded by great irritability and irrascibility.

Depression of mind, when persistent, is always a grave symptom. The desire for seclusion and the tendency to mope, are serious changes of character, and so often are connected with the development of the suicidal impulse, that their occurrence should always arouse the prudent watchfulness of friends. It often occurs that some latent and powerful delusion carefully concealed from every body is then tyranizing over the unhappy victim.

Incipient *aberration* of mind manifested in the *intellectual*, the *perceptive* and the *moral* faculties, forms the subject of the tenth chapter, which is replete with instructive remarks and examples, but from which our space will not allow us to quote. We pass to the last division of the morbid phenomena of intelligence, or *its impairment* as illustrated by general weakness of mind; by impaired or modified attention and by the loss or disorders of memory.

One or other of these faculties is usually the first evidence of the presence of cerebral disease. Sometimes both yield to the attack simultaneously. There is no doubt that, as our author states, "*a debilitated power of attention is a prominent symptom in the early stage of cerebral disorder.*" One patient describes his condition: "I cannot read as I used to do, I am obliged to repeatedly go through a page of a book, and re-read a sentence without having any idea of its purport. The attempt to fix and concentrate the thought requires a continuous, painful and vigorous effort of the will."

The remedy required is *repose*, absolute repose. How often, alas! the brain is stimulated to overcome this want of attention by an increased effort. The result is still greater nervous exhaustion and a less power of attention for subsequent trials. A very interesting account of the illness of the late King Oscar of Sweden, in which this impairment of attention was an early and prominent symptom, is given. It is too long for quotation in our pages. The following case is instructive:

"A member of the Irish bar who became insane whilst at Paris, during the autumn of 1856, and died three months after his return to England, complained to his friends, and subsequently to the surgeon who attended the family, *three years* previously to his attack, of an inability to collect his thoughts whilst addressing the courts of law. He was occasionally observed to stop whilst speaking, as if his ideas were momentarily paralyzed. So marked was this symptom, that a professional friend often associated with him in the conduct of legal matters, considered it his duty to direct the attention of the gentleman's wife to the fact, considering that such attacks of distraction, on occasions when it was of essential importance for the mind to be in a state of continuous activity' looked suspicious, and, according to his judgment, were not consistent with a healthy state of the brain. This patient, two years after the morbid abstraction, or transient loss of consciousness was observed, had a slight *epileptiform* seizure whilst at his chambers, during a very hot day in the month of July. As this attack was considered to have been one of syncope and to be caused by the then high state of temperature, little or no notice was taken of it. Previously to proceeding on the continent, he had been working unusually hard, eating and drinking very sparingly, sitting up late at night and rising early in the morning. In fact, he acted with great indiscretion and imprudence, and the result was an acute attack of brain-disease, affecting the mind a fortnight after his arrival in Paris. There was found, after death, chronic disease of the membranes of the brain, supposed to have been of long existence." (pp. 289–90.)

We regret we cannot follow our author in his elaborate account of the various disorders of memory, although in many respects the chapters devoted to this subject are the most interesting in the book. The following is so admirable in its way, that we commend it to the especial attention of our readers:

"Sudden, transient, and paroxysmal attacks of loss of memory ought to be regarded as most important symptoms when considered in relation to a questionable state of brain. These temporary and apparently trifling conditions of impaired retention are often the preludes to serious manifestations of cerebral disease, the dark and threatening clouds that occasionally envelope, obscure and often eclipse the mind previously to fatal attacks of paralysis, softening, apoplexy and insanity!

"A clergyman, a few weeks prior to an attack of cerebral hemorrhage, experienced on several occasions, whilst preaching extemporaneously, a sudden and momentary paralysis of all his ideas. This occurred four or five times, causing great embarrassment in the exercise of his ministerial duties. Instead of immediately recognizing this to be a symptom of disorder of the brain, imperatively demanding that he should obtain medical advice and temporarily retire from anxious and active clerical work, he indiscreetly and obstinately persisted in preaching twice on the Sabbath-day, and also occupying himself during the week in parochial duties, until he discovered that he was utterly incapable of an act of continuous thought and unable to preserve the current of his ideas, or even connect together two consecutive sentences! This patient died six months subsequently of softening of the brain! Fatal result, may I not add, of an inexcusable neglect of urgent head symptoms?" (p. 303.)

The over-exercise of this faculty in early age may severely injure its powers, and with it also involve the intelligence in general. Up to a certain point the exercise of memory improves its strength and vigor. This point varies in different persons, so that in some it is difficult to conceive the possibility of any exercise being too much. Macaulay could recite a *Times* newspaper, advertisements and all, after a short study of it. Niebuhr, in youth, was employed in one of the public offices of Denmark. Part of a book of accounts having been destroyed, he restored it by an effort of memory. Both Leibnitz and Euler could repeat the whole of the Æneid. Yet it is also true, that many a youth has eventually sunk into imbecility caused by severe and prolonged exercise of the memory. Dickens has admirably sketched, in the person of Mr. Toots, the results of such training.

Under the head of Morbid States of Motion our author discusses quite a number of irregularities in the functions of motion, from the *slight muscular debility*, the very earliest symptoms of approaching paralysis—*the muscular tremor*—which (especially of the tongue) so often foreshadows cerebral diseases and the *irregular muscular action*, that absence of co-ordination which Romberg speaks of, as a "disturbance either in the antagonism or in the symmetrical muscular balance, to those more general *convulsive actions* of which epilepsy is the recognized type." This disease is considered as exhibiting three well marked varieties, viz.: With violent muscular movements; with slight muscular convulsion and nocturnal in its character, and epileptic vertigo, without muscular convulsion. The second variety so often escapes detection, that any assistance in forming its diagnosis is invaluable. The reader will find the discussion of the subject by Dr. Winslow as lucid and comprehensive as the subject will admit of. Among the morbid phenomena of motion, we are apt to overlook the apparently trivial affections of the muscles of the tongue and mouth, yet as this work may help to impress it on our memory, these trivial abnormalities are often the ripples on the lake that precede the storm, "the cloud no bigger than a man's hand," which is soon to gather for terrible destruction. The first observable symptoms of cerebral lesion consist not unfrequently in an inability to protrude the tongue rapidly and freely, in its inclination to one side on protrusion, and in its sometimes tremulous condition. In the early stage of general paralysis, it becomes more flabby and larger than usual. And the progress of paralysis in the muscles of the mouth and cheek may be traced in the gradual inability to spit, or (as in the case of a musician) in the increasing difficulty in using the flute. In this case, the patient showed decided symptoms of softening of the brain fifteen months afterwards. He eventually died from this lesion. Sometimes the same premonitions are afforded by the departures observed from the ordinary mode of writing. The patient discovers he cannot write straight or form his letters correctly. He substitutes one word for another. His letters are found to differ from his former correspondence in being flighty, full of erasures, blunders and eccentricities. Still more important are the indications of approaching cerebral disease we gain from the imperfect motions which affect speech and articulation. To these, however, our limits would not allow us to do justice, and we therefore pass to the *morbid phenomena of sensation*, for sensation may be exalted, impaired, lost, or vitiated.

Hyperæsthesia is present in many nervous diseases, but in none to such an extent as in hydrophobia. A breath of cold air will induce severe convulsions in those thus affected. In other nervous affections it is manifested in a less though an exquisite degree. One form of Hyperæsthesia of the brain, *headache*, is said to be associated with every disease of the brain, excepting atrophy. It does not, however, denote the character of the cerebral lesion. The opposite condition, anasthesia, is perhaps of still greater importance in its connection, as the cerebral disease. Its extent is sometimes most remarkable, especially when it is of psychical origin alone. The well authenticated cases detailed by Dr. Winslow, we have seen to some extent paralleled. Among the insane, however, insensibility to external impressions is more apparent than real in most cases, and is due to preoccupation of the mind.

> "Thou think'st 'tis much, that this contentious storm
> Invades us to the skin : so 'tis to thee ;
> *But where the greater malady is fixed,*
> *The lesser is scarce felt.*
> . . . . . . The tempest in my mind
> Doth from my senses take all feeling else,
> Save what beats there." *King Lear.*

Vitiated sensations sometimes disturb the patient as much as either heightened or impaired sensibility. One experiences pricking sensations, another feels a velvety touch in every thing, while another complains of dust and particles clinging to his feet. Such anomalous sensations must always awaken attention, if not alarm.

The morbid phenomena of the Special Senses occupy chapters xxi. and xxii. Naturally, the morbid changes of vision are dwelt upon more at large than the other senses. Under the head or *Hyperæsthesia, or Exaltation of Vision*, we had marked, on perusal of the work, the following passage for quotation, which we now submit to our readers without comment:

"A morbid exaltation of the sense of sight is occasionally observed among the premonitory symptoms of cerebral disease, the patient complaining either of an acute and sensitive condition of the retina, or of his abnormal expanded visual capabilities. A young gentleman, a few days before an attack of inflammation of the brain, had a painful condition of sight. If his eyes were exposed, even for a minute to the light, he shrieked with pain. In another case the symptom was *precursory* of apoplexy for at least *ten* days. It was, however, associated with severe attacks of vertigo. Andral says, when alluding to this, symptom of brain disease: 'Cases have been observed in which, for a longer or shorter period before the attack, the sight has acquired an unusual degree of fineness.' The existence of important visual phenomena like those previously detailed, manifesting themselves prior to the occurrence of hemorrhage, incontestibly proves, as Andral sagaciously observes, that '*Before the blood is effused, there is already some morbid action, either continuous or intermittent, in the brain, of which it would be important to determine the precise nature.*' How significantly does this sagacious pathologist point out, in this passage, the necessity of carefully studying the *principiis obsta* of cerebral diseases." (pp. 461–62.)

In the observations upon the morbid phenomena of sleep and dreaming, Dr. Winslow emphatically maintains that Insomnia or wakefulness is "one of the most constant concomitants of some types of incipient brain disease, and in many cases a *certain fore-runner of insanity.*" In other cases the encephalic symptons are ushered in by extreme drowsiness, a constant desire and tendency to sleep without the subsequent feeling of refreshment which usually follows healthy sleep. This is not an unusual symptom of the approach of apoplexy. In this connection we may allude to one point generally overlooked in the agency of abnormal sleep in the production of mental disease. It is not always the amount of sleep lost immediately before the attack, that determined the event. Long before that date, perhaps, the patient may have suffered a continuous loss of rest, combined with mental toil, care and anxiety, which may have contributed to undermine the strength of the mental and physical constitution, so that less effective agencies were able at a later period to accomplish the overthrow of reason. This appears to have been the case with the poet Southey, according to Wordsworth's account. "He fell a victim not to literary toil, but to his strong affection for his first wife, which led him *night after night*, when the labors of the day were ended, to watch with sleepless anxiety over her sick bed." Southey's first wife was long insane, and it was not until some time after her death and his subsequent marriage, that his mind gave way. Dr. Winslow has added to this section some interesting remarks on the morbid phenomena of Dreaming. "Patients have complained of being the subject of horrible nocturnal visions, and of the severer forms of incubus or nightmare, previously to attacks of apoplexy, cerebritis, and insanity." This is undoubtedly true, but we must be permitted to receive with some distrust the doctrine that, in epilepsy, paralysis, apoplexy, and other cerebral diseases, the sufferers " appear to have had a morbid psychical *presentiment* of their particular disease as well as mode of death." So much doubt and suspicion cling to the sources of such evidence that great care is requisite, greater care indeed than can usually be had, to exclude error and fraud. One thing, however, seems tolerably clear, where undue attention is paid to the evidence of dreams so that thought and action are materially modified and guided by it, a suspicion of nothing more may be entertained respecting the health of that individual's intelligence. A very interesting chapter is devoted to the morbid phenomena of organic and nutritive life, including *digestion* and *assimilation —circulation—respiration—generation.* We regret that in these as on some other topics discussed in this work, reference is made to another volume to be forthcoming, in which certain matters are to be discussed *in extenso*, and for which therefore they are now left in an unfinished state. We do not object to the volume promised; on the contrary, we shall look with great pleasure for it, but we should prefer to finish one subject before we have to pass to another. This too much resembles the "to-be-continued" style of writers of fiction, who rouse the curiosity to the utmost before each break in the series, and each crisis in the story invariably followed by "to be continued in our next." These remarks apply to some extent to the last chapter, especially to the section on "general principles of cerebral pathology." We must make an exception in favor of the very clear and able manner in which the principles of cerebral diagnosis are discussed. This part of the book will repay the reader's careful perusal and repeated study. The remarks he will find eminently suggestive of the best mode of acquiring, arranging and combining the necessary data for a correct diagnosis of cerebral affections. We could wish that fuller details of the principles of treatment and prophylaxis had been vouchsafed to us, but here the to-be-continued system intrudes upon us. As far as they go, however, the directions for treatment are very judicious. The following caution can never be too firmly impressed upon the minds of all who may have to treat cerebral diseases.

"On the subject of depletion in insanity, Dr. Seymour observes: 'In the great majority of cases, the functions of the brain in mental derangement are increased in force while the circulation is depressed, extremely quick and feeble, and the action of the heart gives way to the smallest abstraction of blood; and yet these are often attended by raving delirium, great increase of muscular force, and are in fact what are termed *high* cases. The consequence of such practice is, either the more frequent return of the high stage, or the patient sinks into one approaching idiotcy.'"

The use of tartar emetic, prolonged warm bath and cold *douche* during the bath, of aperients, of leeches, and local depletion, are recommended sparingly and cautiously in certain cases. Opium, however, in some form Dr. Winslow considers, and justly so, as the sheet-anchor in those diseases wherein abnormal psychal manifestations are the most prominent symptoms. Quinine or iron, and tonics generally, will be found necessary in most cases during some stage of their progress. It must be borne in mind, however, in this class of affections, that we must not be content to attack them only when firmly established. If we wait until they have become settled, our labor will be great and tedious, the issue more than doubtful. We must treat them successfully; for "it is not enough," as Dr. Graves not only watch for symptoms as they arise in order to remarks, when referring to the obscure cerebral affections observed in some cases of fever, "to treat them when they come; THEY MUST BE SEEN AND MET COMING."

CURRENTS AND COUNTER-CURRENTS.

1.—*Currents and Counter-currents in Medical Science. An Address delivered before the Massachusetts Medical Society, at the Annual Meeting, May 30, 1860.* By OLIVER WENDELL HOLMES, M.D.

2.—*Lectures on the Principles and Methods of Medical Observation and Research, etc.* By THOMAS LAYCOCK, M.D., etc., Professor of the Practice of Medicine, and of Clinical Medicine in the University of Edinburgh, etc., etc.

WE place the titles of these two Essays at the head of this article, for the purpose of presenting two advocates of medical reform, each supposed to be honestly desirous of promoting the best interests and highest advancement of medicine. They represent two very different classes, if not two extremes. The one, the skeptical professor; the other, the trusting but working disciple—the one representing in bold array what medicine has *not* accomplished, and apparently taking pleasure in cataloguing its unstable and uncertain therapeutics, at least carefully keeping out of view its acknowledged triumphs—the other discriminatingly aware of its crude observations, its premature generalizations, its presumptuous theories, and its vaunted principles—falsely so called—is yet earnestly laboring to remove all these defects, and hopefully offering the means for securing a substantial progress.

But that we may deal justly with the authors, we propose confining this article chiefly to an abstract of the views, contained in the essays, reserving the discussion of the main subject involved for another number.

The "Address" was delivered before the Massachusetts Medical Society, which, by a vote of nine to seven, disclaimed all responsibility for the sentiments of the address.

The author, after a brief introduction, in which he bears a beautiful, if not tender tribute to the departed members of the Society, boldly breaks ground by proclaiming that the medical man, as he goes about his daily business, even after twenty years of practice, is in many cases deceived if he "supposes that he treats his patients according to the teachings of his experience. These long years of supposed observation have failed to impress upon his mind any convictions of medical truth, or results of practice, that can safely be relied upon as guides to those that follow. His duties are performed according to the rules of the craft, with no questionings of the past or the future, are in conformity with the prevailing mode, and like all *fashions*, must change. If he seemingly advances, some under-current is drifting him away from all the sound conclusions of reason or induction.

The most efficient influence—it is asserted—that diverts medicine from the "straight-forward inductive path," that all agree she should pursue, is the pressure of prevailing political, religious, philosophical and imaginative opinions, to which she is as sensitive "as the barometer to the changes of atmospheric density." The coincidences between great political, religious and intellectual periods, and the appearance of illustrious medical reformers and teachers, are adduced in evidence of these "outside influences."

Socrates, Plato, and Phidias require the addition of the name of Hippocrates, to complete the glory of the age of Pericles. The rule of Aristotle far outlived the reign of his conquering pupil, Alexander. The Ptolemies and Herophilus, Marcus Aurelius and Galen, Luther and Vesalius, Calvin and Servetus, Bacon and Harvey, Napoleon and Bichat, the American Revolution and Benjamin Rush, were contemporaneous, each, on the one side, representing some marked intellectual, political, philosophic or religious movement; each, on the other, some great reform or advance in medicine.

We acknowledge the diffusive and moulding influence of great minds and great events upon their age, and see in the main no great cause of regret that it should be so; but at the same time we claim that medicine has been as far removed from undue influences as any department or science, so intimately linked with the daily interests of society, possibly could be.

Our author next illustrates this sensitiveness to outside influences, by the supposed bearing of two great currents in the intellectual movements of our own times; the one, adherence to traditional belief, as the ark of the covenant, containing all things sacred, and necessarily inviolate; the other, that prying skepticism of science, that seeks for positive knowledge, and the more it gains the more it inclines to question all that has not been verified by absolute proof. In medicine, these two currents are seen in the revival of the old question of "Nature," or confidence in the self-recuperative powers of the living organism under the guidance of its own laws—and "Art" with all its traditional confidence in the efficacy of therapeutic interference.

The ancient representatives of these medical extremes are Hippocrates and Themison; the former watching "Nature" in all her operations, and, in the treatment of disease, endeavoring to follow indications thus furnished; the latter ridiculing the practice by calling it "a meditation on death."

Our present author musters under the Hippocratic banner, with its modern device, "Nature," emblazoned on its folds, and borne aloft by such worthy defenders as Sir Jno. Forbes, Bigelow, Jackson, Hooker and Holmes.

We accord to the principle and its defenders all due honor, as they throw themselves "in the great current in which the intelligence of the time is moving," and fearlessly trusting that the confidence which has ever been reposed in the profession, cannot be impaired "by any investigations which tend to limit the application of troublesome, painful or dangerous remedies."

And we accept the position, that a body of enlightened men, though deprived of all the armamentaria of drugs, "would be required just as much as now, and be respected and trusted as now, whose province should be to guard against the causes of disease, to eliminate them if possible when still present, to order all the conditions of the patient so as to favor the efforts of the system to right itself, and to give those predictions of the course of disease which only experience can warrant, and which in so many cases relieve the exaggerated fears of sufferers and their friends, or warn them in season, of impending danger. Great as the loss would be, if certain active remedies could no longer be obtained, it would leave the medical profession the most essential part of its duties, and all, and more than all its present share of honors; for it would be the death-blow to charlatanism, which depends for its success almost entirely on drugs, or at least on a nomenclature that suggests them." In this quotation we have in part the *petitio principii* of the point at issue—the acknowledgment of the great loss that the practitioner and the community would sustain in being deprived of the use of "certain active remedies," and by inference, that from this starting-point, though at a disadvantage, the next step in further progress must be to supply the want.

The "Professor" next attacks the "overdosing mania," and then points out some of the sources of error in our estimate of the efficacy of remedies. Paris and Andral, Alison and Drake, have done the same thing before him, and allowing him a fair credit in this line, we must say *they* have done it more thoroughly and much more candidly. "Young America," "Fast America," with "its sanguine enterprise, its self-confidence, its audacious handling of Nature, its impatience with her old-fashioned ways of taking time to get a sick man well," furnish the author fine themes for turning some beautiful periods and pointing some keen epigrams. But as he appeals to his audience as "those who are accustomed to count the normal pulse-beats of sound judgment, and who know full well how to recognize the fever-throbs of conceit and the nervous palpitations of rhetoric," we accept the conscious intimation that the habitudes of the poet, and the seductive temptations of the satirist, may have, in part, carried him out of the sober gait and beyond the severer accuracy of scientific truth. He may have drifted into that current of skepticism that has loosened the anchorage of many a fearless thinker.

But we are persuaded better things of our author, though we thus speak. We receive his strictures, not as the sneers of a scoffer, but reproofs of a friend. We have no apprehensions for medicine from such manly attacks. The shams of society only suffer from exposure. The light that discloses the hollowness of the hypocrite, reveals the genuineness of the true heart.

While "no denunciation of drugs, as sparingly employed by a wise physician, was or is intended," while "the large exception of opium, wine, specifics, and anæsthetics" is granted, we feel that Dr. Holmes has admitted enough to refute some of his own objections, and quite sufficient to smooth the ruffled feathers of many who at a first reading will bristle up to repel a supposed attack.

It is a proposed reform in the accepted dogmas of medicine, presented to the profession by one within its pale, a peer among its honored members: it is "a fight within the Union to save the Union." In such a contest the loyalty of none is to be questioned, because of the perversions which outsiders may make of his opinions.

But, with all these admissions, we think there is a "better way." That honest searchers after truth, accepting the rich legacy of unquestioned experience, bequeathed by a long line of medical ancestors, should receive it with a fair share of that faith that lies midway between medical infidelity, doubting all things, and that plaster credulity which accepts the fancied miracles of Homœopathy.

This "better way" is, in part, foreshadowed in the little volume of Dr. Laycock. It consists of Seven Lectures, delivered as an introduction to the course on Clinical Medicine, in the University of Edinburgh, during the summer of 1856. They were prepared because the author, when about to enter for the first time upon his duties as teacher of practical medicine, found no treatise "which instructs the medical student, in a simple and easy form, how to use his reason; none which explains to him in especial the nature of the mental processes by which knowledge is acquired in his particular sphere of labor; none which teaches him the applications to practical medicine of those aids to the intellectual powers which modern inductive philosophy uses so commonly and so efficiently."

Acknowledging the want, we receive this laudable contribution towards a supply with the gratitude it merits.

Dr. Laycock accepts without controversy the incompleteness of our knowledge in medicine, acknowledging that the "conclusions of the medical philosopher are liable, in a thousand ways, to error." But this conviction only serves as an incentive to a more persevering effort, to remove if possible these sources of error, diminish the doubts, largely increase the certainties, and extend the application of principles already defined. It is intended as a kind of medical logic for the use of students and practitioners.

In his first lecture he presents the principles that should govern observation, as well as the sources of error, and in recapitulating it, says:

> "1. That medicine is necessarily a conjectural art—necessarily, because in the present state of physiology, pathology and therapeutics, a positive science, which alone can give rise to a positive art, is not attainable. 2. That experience, derived from careful, sedulous and accurate observation and experiment, is the safest source of practical knowledge and the best test of all theories. 3.

That for the advancement of all knowledge, and its application to practical uses, theories and hypotheses cannot be dispensed with, but that, on the contrary, they are essential even to observation, and to the best use of a matured experience. 4. Consequently that both theory and observation are necessary to the practitioner—theory, by pointing out what needs to be observed; observation, by correcting and enlarging theory."

The skill and tact in the practitioner thus attained, he defines to be "the power to determine quickly and clearly what ought to be done, what can be done, and *how;* what can be done, may be accomplished."

The most valuable part of this chapter, is the faithful exposure of the "fallacies" that so often lead us astray in our inquiries. For example, the "fallacy" of substituting a theoretical word for a fact—of adopting a mere assumption as a general principle, and erecting a so-called system upon it—therapeutic fallacies, whose name is legion—accepting theories as truths, as the buffy-coat on blood—the inflammatory origin of tubercle, etc., and the multitudinous fallacies that surround and embarrass the subject of causation.

We shall at present have space only to indicate the subjects of the succeeding lectures, as they will come in review in a future number. The *second*, treats of the general method and object of clinical study, including all the instrumental aids to sense and perception, with a judicious warning against unduly estimating their importance, and leading to a slavish dependence upon them, to the neglect of that skill and tact which will always find the practitioner armed for the varied exigencies of his professional life. The short chapters on the physiognomy of disease are in truth but amplification of this acute, discriminating estimate of morbid states. The *third* gives details of the special clinical examination of the patient, for the purpose of reaching a final conclusion as to the nature, cause and treatment of the disease present. In aid of this most important object, the author gives a few short, comprehensive chapters, with definitions, on the diatheses and cachexiae, with their distinctive physiognomy. Prognosis and the order of succession of morbid phenomena are discussed in the *fourth*, and the due estimate of treatment, and the management of the case, in the *fifth*, with the many sources of error that so often vitiate our conclusions.

The two remaining lectures are devoted, the one to the numerical method of research in medicine, the other to the analogical, philosophical, or purely inductive method. The importance of these subjects, their clear exposition, and the illustrative applications, make them, we think, the most valuable in the volume. To these we shall have occasion to refer again.

HAMILTON ON FRACTURES AND DISLOCATIONS.

A Practical Treatise on Fractures and Dislocations. By FRANK HASTINGS HAMILTON, M.D., Professor of Surgery in the University of Buffalo; Surgeon to the Buffalo Hospital of the Sisters of Charity, etc., etc. Philadelphia: Blanchard and Lea, 1860. (pp. 757.)

SUCH is the title of one of the most valuable volumes ever issued from the Medical Press of this country. A complete work upon Fractures and Dislocations has long been a desideratum in our profession, as the following extract from our author's preface will clearly show:

> "The English language does not at this moment contain a single complete treatise on fractures and dislocations. The two small volumes of Desault, and the one of Boyer, issued near the close of the last century, and translated into English early in this, may perhaps properly enough have been regarded as complete treatises at the time of their publication, but they cannot be so considered now. The several chapters on '*Diseases and Injuries of the Bones*,' contained in the *Lecons Orales* of Dupuytren, translated in 1846, and the '*Treatise on Fractures in the Vicinity of Joints, and on Certain Forms of Accidental and Congenital Dislocations*,' by Robert Smith, are invaluable monographs, but neither of them claims to be any thing more than a collection of occasional and miscellaneous papers. The writings of Amesbury and of Lensdale relate only to fractures. Even the justly celebrated quarto of Sir Astley Cooper, is no more than what its title plainly declares it to be, *A Treatise on Dislocations and on Fractures of the Joints;* but since the announcement of the present volume, a translation of Malgaigne's great and crowning work on Fractures and Dislocations has been commenced by Dr. Packard, of Philadelphia, and the first volume has been placed in the hands of the American profession. Should the remaining volume be rendered into English, the gap in our literature will be measurably filled."

From the very nature of the case, a work of this kind, prepared by a European, however complete it may be as viewed from his stand-point, must, to a certain extent, prove unsatisfactory to the profession of this country. "The contributions of American surgeons to this department, are to be sought chiefly in medical journals, many of which have long been discontinued, and most of which are inaccessible" to foreign writers, and the "labor of exhumation from archives hitherto almost unexplored," could not be well performed except by some one familiar with the ground.

In the accomplishment of this task, the acknowledged abilities and laborious researches of Prof. Hamilton have been brought into requisition, and that it has been successfully performed, the volume before us amply attests. It will be a lasting monument to the ability and faithfulness of the author, and more—the means of elevating the standard of American surgery in the eyes of the world.

The volume is divided into two parts: I. Fractures. II. Dislocations.

Part I. is subdivided into thirty-five chapters, the first six or seven of which are devoted to fractures in general, those remaining to special fractures.

Fractures are divided into Complete and Incomplete, Simple, Comminuted, Compound, and Complicated, the definitions of which terms are so clearly given, that we make the following abstract of them for the benefit of our readers:

"A 'Complete' fracture is one in which the line of division completely traverses the bone.

"An 'Incomplete' fracture implies only a partial separation of the bone.

"A 'Simple' fracture is one in which the bone is broken at only one point. It would be more correct, perhaps, to substitute the word 'single' for 'simple,' as has been done by Malgaigne and some other French writers, but I fear that to American surgeons the substitution would be rather a source of confusion than otherwise.

"A 'Comminuted' fracture, called by Malgaigne 'multiplé,' is a fracture in which the bone is broken at more than one point, and in which, consequently, the bone is divided into more than two fragments. It is also used in a technical sense, and by no means implies minute division or comminution of the fragments.

"A 'Compound' fracture is technically one in which there exists also an external wound communicating with the bone at the point of fracture.

"'Complicated' fractures are such as present additional complications, or complications for which no other specific term has been invented. Thus the fracture may be complicated with the lesion of an important blood-vessel or nerve, or with great contusion or laceration of the soft parts, with a dislocation, or with fractures of other bones, or even with some constitutional fault.

"Fractures are also divided into Transverse, Oblique and Longitudinal, according as the direction of the line of separation is at a right angle with the axis of the bone at the point of fracture, or as it deviates more or less from this direction."

Whenever the obliquity of a fracture is moderate, it is classed among the Transverse. If the deviation of the line of a fracture is parallel to the axis of the shaft of the bone, it is called Longitudinal, and these, our author tells us, generally occur in connection with oblique or transverse fractures.

"A 'Serrated' fracture is one in which the opposite surfaces denticulate, the elevations upon one fragment being reflected by corresponding depressions upon the other."

"'Impacted' fractures are driven into each other, the lamellated structure of one fragment penetrating the cancellous structure of the other."

Epiphyseal separations are classed with fractures, and subjected to the same rules of nomenclature.

Among the prominent, predisposing causes of fractures mentioned, are age, sex, and all those diseases dependent upon a depraved condition of the body, such as rickets, cancer, tertiary lues, scurvy, etc.

Complete fractures occur most frequently during middle age, from the fact that at that period the exciting causes are most active. Of these latter, two are mentioned: mechanical violence and muscular action, the former of course being much the most frequent. The violence may be inflicted at the point at which the fracture occurs, and then it is called "direct," or a fracture from "direct violence;" or when inflicted at some point remote from the injury, the fracture is then called "indirect," or from "counter-stroke."

As a general rule, fractures from muscular action occur with those persons in whom there exists a condition of the bones themselves predisposing to such injuries. Dr. Hamilton, however, says he has "seen one example of a fracture of the shaft of the femur in a large and perfectly healthy man, occasioned by a twist of the leg in rolling ten-pins. Parker, of New York, relates a case of fracture of the humerus in a a negro preacher, which occured in the act of gesticulation, also a fracture of the clavicle occasioned by striking a dog with a whip; in another case the humerus was broken in attempting to throw a peach; but the most singular case of all was a fracture of the humerus caused by an effort to extract a tooth."

In regard to intra-uterine fractures, a satisfactory explanation of which has never been given, our author thinks that they, "like extra-uterine fractures, may be ascribed sometimes to external violence, and at other times to simple muscular contraction, both perhaps acting upon bones already somewhat predisposed by a peculiar constitutional cachexy." In our own practice we remember to have seen but one fracture, existing at the time of birth—this was a simple transverse fracture of the clavicle, occurring near the centre of the bone, and evidently the result of undue violence on the part of the midwife during parturition. We apprehend that genuine intra-uterine fractures are of very rare occurrence.

But few physicians pass many years in practice without being at times very much perplexed in determining the exact nature of some injury, involving the bones. Fractures occurring near and complicated with a dislocation or other injury of a joint, are, on account of the swelling and deformity which follow, very often exceedingly difficult to diagnose, embarrassing even the most expert. A few symptoms, however, should be prominent in the mind of every physician and surgeon, which, like land-marks, will serve to guide him when in doubt. Upon this subject we quote the following paragraph, which, in a few words, contains much that will be useful on such occasions:

> "The most important, general or common signs of a fracture—and by 'common' signs I mean those which are common to most fractures—are crepitus, mobility, and an inability on the part of the fragments to maintain their position when reduced; indeed, in many cases, this constantly recurring displacement is due to the fact that the surgeon is unable to accomplish a complete reduction. While on the other hand, dislocations are almost as uniformly characterized by the absence of crepitus, by preternatural immobility, and by the fact that when reduced the bones do not usually require support to retain them in place, or indeed we may say, by the fact that they are generally reducible." (p. 41.)

In regard to the complete reduction of fractures our author takes the ground that "bones once separated entirely cannot generally be 'set,' that is, placed again end to end, in such manner as to be made effectually to support each other." This statement rests upon the evidence of his own experience, and in support of it he quotes the following from Malgaigne: "Second. That overlapping is the most stubborn of all. Here I will add a disagreeable truth, which classical authors have kept too much out of sight, namely, that it is so stubborn that in an immense majority of cases the efforts of art are unable to overcome it." Almost every fracture can be completely reduced and nicely adjusted by the proper application of a sufficient power—but naturally enough, unless the fracture be transverse, or nearly so, the ends of the fragments present no opposing surfaces, and when the power is lessened or removed, they over-ride. In the vast majority of cases we find it impossible to apply force enough to keep the ends of the bone in apposition for a sufficient length of time to allow them to unite, and as a consequence we are compelled to submit to a slight deformity.

In the following extract the author gives expression to some humane directions, which cannot be too highly commended:

> "I cannot dismiss this subject without calling attention to the necessity of exercising care and gentleness as well as skill in the examination of broken limbs. Nothing, in my opinion, betrays a lack of judgment as well as of common humanity on the part of the surgeon, so much as a rude and reckless handling of a limb already pricked and goaded into spasms by the sharp points of a broken bone. It is not enough to say that such rough manipulation is generally unnecessary, it is positively mischievous, provoking the muscles to more violent contractions, increasing the displacement which already exists, and not unfrequently producing a complete separation of impacted, denticulated, transverse, or partial fractures which can never afterwards be wholly remedied, augmenting the pain and inflammation, and not unfrequently, I have no doubt, determining the occurence of suppuration, gangrene, and death. In proceeding to establish the diagnosis in any case, the surgeon should sit down quietly and patiently by the sufferer, so as to inspire in him from the first a confidence that he is not to be hurt, at least unnecessarily. He ought then to inquire of him minutely as to all the circumstances immediately relating to the accident, in order that he may determine as nearly as possible its cause, which alone, to the experienced surgeon, often affords presumptive, if not conclusive evidence as to the nature and precise point of the injury. From this he should proceed to examine the disabled limb, removing the clothes with the utmost care by cutting them rather than by pulling ; and when completely exposed he should notice with his eye its position, its contour, the points of abrasion, discoloration or of swelling ; and not until he has exhausted all these sources of information, ought the surgeon to resort to the harsher means of touch and manipulation." (pp. 43–4.)

The process of repair in fractures is briefly treated of in a single chapter. Considering that many of our ablest pathologists have been long at variance upon many points involved in this subject, we regret that our author has touched it so sparingly. He believes that a plastic lymph is poured out from the vessels of the medullary membrane and the lacerated tisues at the seat of the fracture, which in the course of time becomes organized, and then receives "from the same sources particles of bony matter, through which the consolidation is finally effected." In rare cases, which are called "fortunate examples," bones unite without the intervention of a reparative material. A fractured bone may unite in one of six different modes, which are stated in as many paragraphs, after which we find the following:

> "In short, we conclude that fractures of adult human bones, whether placed end to end or overlapped, unite most naturally and most promptly either immediately or mediately, and in the same manner that soft tissues unite; that is to say, without the interposition of any reparative material, or through the medium of an intermediate permanent callus, and that all deviations from these simple methods are accidental, or the result of disturbing influences." (p. 49.)

In the treatment of all fractures three indications are always to be borne in mind, namely, "to restore the fragments to place as completely as possible, to maintain them in place, and to prevent or to control inflammation, spasms, and other accidents." The first of these should be accomplished at the earliest possible moment after the occurrence of the accident. In the vast majority of cases reduction of fracture can be made during the first visit and dressings either temporary or permanent applied. We are especially instructed not to wait a single moment beyond the possibility of a reduction, and this we regard as important and valuable advice.

In the selection of apparatus for the dressing of fractures, our own experience has taught us that the more simple it can be made the better, not only as regards the comfort of the patient, but also the convenience and success of the surgeon. Thus we rarely use bandages next to the skin before applying our splints, and except in cases of non-united fractures, but seldom use "immovable apparatus," such as starch, dextrine, etc.

We would be glad to notice in detail some of the more important fractures and their modes of treatment, fully and ably detailed in this volume, but our limited space forbids us saying much more. One thing however of which, as Americans, we can justly boast, demands in this connection some notice. We refer to the use of adhesive plaster as a means of extension. It was originally suggested by one of our own countrymen, and has been the means of relieving the treatment of certain fractures from much pain and embarrassment. Upon this subject we quote the following passage:

> "The adhesive plaster bands are beyond all comparison the best means of making permanent extension which are at present known to surgeons. Hitherto one of the most serious difficulties in the way of extension, and the objection which has been most effectively urged against its adoption, has been the excoriations, ulcerations, and even sloughing, which so often occurred from the use of the various extending bands about the ankle. This, together with the injuries occasionally inflicted by the perineal band, has been regarded by other surgeons than Dr. Mott, whose opinion we have already quoted, as a sufficient reason for preferring the flexed position. But no one who has employed the adhesive plaster extending bands will doubt that, so far as injuries to the foot and ankle are concerned, this objection is now entirely disposed of. It is adopted in many, perhaps most of the American hospitals, and in no case where it has been employed have I known the slightest excoriations to have been produced." (p. 419.)

Dr. Hamilton regards adhesive bands as important in the treatment of fractures of the thigh, and says, "that it is not surprising that several claimants have appeared for the original suggestion." These are Drs. Wallace and Gross, of Philadelphia, Dr. Crosby, of New Hampshire; and we may add that we have heard the claims of Dr. Childs, of Pittsfield, Mass., urged in former years.

As a means of counter-extension, adhesive bands have not been successful in the hands of our author.

Part II. is divided into twenty-six chapters, the first of which is devoted to "General Considerations."

Dislocations may be considered as accidental or traumatic, spontaneous or pathologic, and congenital. The former class of course are those most frequently met with, and may be classed under the different heads of Complete and Partial, Simple, Compound and Complicated, Recent and Ancient, Primitive and Consecutive.

No branch of surgical practice requires a more thorough knowledge of anatomy and tact in applying that knowledge than the diagnosis and reduction of fractures. The exact position of the displaced bone must be clearly determined, and the forces which oppose its return taken into consideration. With a full knowledge of these, common-sense will indicate to every one the mode of applying power to effect a reduction. Muscular contraction properly overcome and the locking of bony projections prevented, the displaced bone is easily guided into place. "Let a man practice any other branch of surgery if he will, without experience or scientific knowledge, but he must not attempt to reduce dislocated bones.

"The most learned and the most skilful we shall find falling into error, embarrassed by the uncertainty of the diagnosis, or successfully resisted by the power of the opposing agents; what then can be expected of those who are both ignorant and inexperienced, but failures and disasters?"

With characteristic good sense, the author has adopted, in treating of special dislocations, those classifications most familiar to American students. Thus in dislocations of the shoulder we find the familiar classification of Sir Astley Cooper, namely, downwards, forwards, and backwards, under which all that can be of any practical utility is said. Under this familiar nomenclature, however, Dr. Hamilton expresses fully his own views and the results of his own experience, not hesitating when he thinks them wrong to differ with the conclusions of standard authorities.

In treating of dislocations of the thigh-bone, we are informed that:

"The femur is especially liable to dislocation in four directions, namely, upwards and backwards upon the dorsum ilii, upwards and backwards into the ischiatic notch, downwards and forwards into the foramen thyroideum, and upwards and forwards upon the pubis. Dislocations are occasionally met with which cannot be arranged properly under either of these divisions; indeed it is scarcely necessary to say that the head of the bone may be thrown in almost every direction from its socket, upwards, downwards, inwards and outwards, or in either of the diagonals between these lines; and that while, in a vast majority of cases, it will assume one of the positions first named, it may in a few exceptional examples fall short of or much exceed the limits assigned in this division." (p. 619.)

In treating of the reduction of these dislocations, the one upon the dorsum ilii is regarded as the type, and the various methods employed by surgeons are arranged under two principal heads, namely, manipulation and extension. The former method "dates from the earliest records of our science," in proof of which the following passage is quoted from Hippocrates: "In some the thigh is reduced with no preparation, with slight extension directed by the hands, and with slight movement; and in some the reduction is effected by bending the limb at the joint, and making rotation."

The name of Dr. Nathan Smith, of New Haven, has been long known in connection with this method of reducing dislocations. As early as 1815 he taught it in his lectures, as Prof. of Surgery, in New Haven Medical College, and in 1824, being under oath, made the following statement: "I do not think that the mechanical powers, such as the wheel and axle, or the pulleys, are necessary to reduce a dislocated hip, or any other dislocation." It is to be regretted that this successful surgeon left no record of his views and practice. From the following passage it will be seen that prior even to the earliest date at which Dr. Smith is known to have advocated this method, it had been practiced in this country by at least one other distinguished surgeon:

"On the 7th of January, 1811, Dr. Philip Syng Physick, of Philadelphia, reduced an outward dislocation of the hip, after extension had failed, by flexing the thigh to a right angle with the body, and then giving to the limb an outward circular sweep." (p. 628.)

Reduction by extension also dates from a very early period in the history of surgery, and strange enough have been many of the devices in vogue. What would a surgeon of our day, for instance, think of adopting the Hippocratic method of putting a patient astride the upper round of a ladder, and attaching a weight to the dislocated thigh, or of suspending him from a gallows, head downwards, and adding his own weight to that of the patient? a method which Hippocrates characterizes as "a good, proper and natural mode of reduction, and one which has something of display in it, if any one takes delight in such ostentatious modes of procedure."

We are fortunately relieved from the necessity of employing such "ostentatious modes" now, as by the use of the pulleys, recommended and used by Ambrose Paré, we have a convenient and comparatively safe means of making any necessary extension.

There is much more in this interesting volume which we would be glad to notice, but the limits of a single number forbid. In conclusion we may say, that the mechanical execution of the work is well calculated to add to the already high reputation of Blanchard and Lea. The illustrations are numerous, original, and well executed, forming by no means the least valuable feature of the volume.

ASHTON ON DISEASES OF THE RECTUM.

On the Diseases, Injuries, and Malformations of the Rectum and Anus, with Remarks on Habitual Constipation. By T. J. Ashton, Surgeon to the Blenheim Dispensary, Fellow of the Royal Medico-Chirurgical Society, etc., etc. Philadelphia: Blanchard and Lea. 3d Edition. (pp. 292.)

No class of diseases, as we are informed in the introduction to the work before us, is more simple at the outset, or more easily managed if properly understood, than those affecting the rectum. At the same time, no class is more frequently mismanaged and badly treated, for the reason that the medical profession of our country, as a body, has not paid sufficient attention to them, to be enabled to give them that consideration which their importance demands. If it was otherwise, we should have fewer vaunted specifics for hemorrhoids, constipation, etc., placarded on the street corners and published in every newspaper. Nor should we, as is now the case, find one or two men of the medical profession in each State, with so much greater reputation for skill in the treatment of these affections than their brethren.

This inattention and consequent want of knowledge on the part of the profession, is not altogether culpable, for it depends mainly upon a cause beyond their control. From the almost universal prevalence of what is mistaken for modesty, very few persons will complain of any disease of the rectum or genitals, until it has become unendurable, and even then there is most frequently unwillingness to submit to the proper inspection. This is particularly true of females, who suffer most from these affections, but it is by no means confined to them. In consequence, the physician when consulted concerning a case of this kind hesitates to propose an examination, which he knows beforehand will not be pleasant to his patient, nor agreeable to himself, and is too apt in making a diagnosis to be guided by an imperfect statement of the case by the sufferer, influenced by disordered sensations, and to prescribe what is likely to do as much harm as good. What is true of the general practitioner was, until lately, true, to a certain extent, of hospital surgeons and physicians, and also of those who have opportunities for clinical observation in large cities. No considerable attention was paid to this subject, and though much has been written, it is not sufficiently accurate, nor satisfactory. In fact, in most of the systems of surgery published ten years ago, the subject is but slightly touched upon; we therefore receive with pleasure any work which promises to increase our knowledge of so important a group of diseases.

Mr. Ashton, in the introduction to his work, shows his disapprobation of the exclusive study of specialties, and the importance of a thorough examination, before adopting a decided course of treatment in diseases of the rectum; and we will do well to remember what he says in all cases. "In past ages and in the present time a popular idea has prevailed, that a deeper knowledge of, and a more intimate acquaintance with, the diseases of any certain organ is obtained by an exclusive consideration of that particular part; but no greater fallacy can be conceived, it being only by a comprehensive view, and after due consideration of all the symptoms produced, and the various phases presented by disordered function and organic change in the various parts of the animal economy, that a just conclusion as to the *fons et origo mali* can be arrived at. Perhaps few classes of disease exemplify the necessity of a wider and maturer consideration than those implicating the rectum, either primarily or secondarily; for the same symptoms will often be found existing under the opposite conditions of cause and effect. Thus, in the female, many instances have occurred of stricture of the rectum being supposed to exist, and a long and useless treatment had recourse to, when ultimately all the patient's sufferings were found to depend on a displaced uterus, or on some morbid enlargement or growth of that organ; and the converse is not unfrequently the case, of a patient being treated for leucorrhœa or uterine disease, whilst the real source of the symptoms has been some affection of the rectum. In the male, also, will be observed stricture of the urethra, diseases of the prostate gland and bladder simulating those of the rectum; or, on the other hand, diseases of this portion of the alimentary canal producing irritability and other disturbance of the genito-urinary organs. Nor is it in contiguous parts alone that the reaction of one organ on the other is met with; it is necessary, therefore, to bear in mind the more remote sympathies induced in the cephalic, thoracic, and abdominal viscera, as evinced by headache, vertigo, impaired vision, palpitation of the heart, gastric distension, pain and sickness; and deranged secretion from the kidneys, as exhibited by the various urinary deposits."

Those of the profession who have had much experience in the treatment of uterine affections will appreciate the above quotation, as well as the surgeon who treats diseases of the rectum.

In the introduction, also, the modern treatment of certain affections of the rectum, as fistula in ano, and fissure of the anus, is contrasted with that formerly in vogue, to show the great change and improvement which have been made in this department of surgery. And we cannot feel surprised when an affection so simple as fistula in ano was, within comparatively modern times, treated by the actual cautery, escharotics, and by scooping out the tract of the fistula with instruments, occasioning extensive destruction of the parts involved, much suffering, and danger to life, that there should still exist in the popular mind dread of its occurrence and of surgical interference for its cure.

At page 35, we are reminded of the importance, in all operations about the anus, of avoiding, as far as possible, the destruction of the integument, if we would escape the consequences of the contraction which necessarilly follows where this precaution is not observed.

At page 37, the usefulness of enemata is commented on, and some very sensible remarks made concerning the instruments used in administering them.

"Whatever the form of the instrument, the jet should be elastic, and not—as usually supplied by instrument makers—made of ivory or metal, by which laceration, or other injury of the bowel is very readily inflicted." All the more, because few physicians or surgeons pay much attention to this mode of medication; it is usually entrusted to unskilled hands, and the consequences are, now and then, serious indeed.

In the last paragraph of the Introduction the author corrects an error, which we believe to be generally prevalent in this country, as well as in England, namely, that diseases of the rectum are most common among people in easy circumstances. He states that from his experience he believes this to be incorrect; "that they exist among the working classes to an uncredible extent, but from certain prejudices and popular opinions they entertain, as well as for other reasons, they seldom seek relief at our hospitals." We believe diseases of the rectum to be most prevalent, in this country, among those who may be called the middle class, and the inhabitants of towns rather than those who follow agriculture, among females more than males, and that they are frequently induced by the pernicious habit, so prevalent, of swallowing vast quantities of purgative drugs. It is also true, that application to the surgeon for relief, is rarely made until some serious symptom creates alarm.

Chapter First is devoted to the consideration of Irritation and Itching of the Anus. It is too brief to be entirely satisfactory, but contains, in a condensed form, most of what has been ascertained concerning this troublesome affection. The author opposes, as we think correctly, the opinion which is supported by some, "that a pruriginous state of the anus ought not to be interfered with, as it prevents the accession of more serious diseases to which the individual may be predisposed." In those cases in which sudden death follows the cure, or spontaneous subsidence of this morbid condition, it is not easy to trace the relation of cause and effect. It has long been known that itching of the anus is usually a symptom of some other disease, and that it is cured, not by direct treatment, but by the removal of the state which produces it.

At page 49, in the chapter on Excrescences of the Anal Region, we are recommended to use the knife for the removal of warts and condylomata of considerable size, instead of the ligature or escharotics, because it is more certain, and much less painful. The author warns against the removal of any portion of the integument with the excrescences, that the condition described at page 55, Contraction of the Anus, may not result.

At page 64, after describing, in the three preceding pages, Fissure of the Anus, its causes and the modes of diagnosticating, in detailing the treatment, the author states what we have found to be true. "My experience fully justifies me in stating, that in the majority of recent cases, it is not necessary to have recourse to an operation, although some of high authority in the profession assert, that incision is the only effectual remedy, and that all sorts of applications, soothing and irritating, are unavailing." He then recommends frequent ablutions with soap and water, washing out the rectum with water, and medication with astringents (lead) and anodynes, as opium; and belladonna, when there is much spasm of the sphincter. He, however, cautions against the effects of belladonna in large doses. When this mild treatment fails, "and the fissure does not heal, but, on the contrary, the edges become indurated, and the surface pulpy and indolent, the free application of nitrate of silver, at intervals of a few days, for two or three times, will generally induce a healthy reparative action in the part, though often at the cost of much pain to the patient." We believe most cases of this painful disease may be cured by these two sets of means, if they are properly applied. When they fail, the author advises an operation, that is, "incision through the ulcer," but he condemns the plan of incision originated by Boyer, and practiced frequently in this country at the present time, by which the sphincter ani is divided, with or without division of the fissure. In this he agrees with Copeland, Syme, and Brodie. He says, "the operation may be performed in two ways, either by cutting from within outwards, or from without inwards." For the purpose of cutting from within outwards (the person being in proper position), a rather thick, straight, probe-pointed bistoury, made for the purpose, is to be used, "and the forefinger, previously oiled, being introduced into the rectum, the knife must be pressed flat upon it till the point reaches the upper margin of the fissure or ulcer, when its edge must be turned, and an incision made through the mucous membrane, without extending it through the other structures." The other mode of operating (Syme's) "is performed by transfixing the ulcer beneath its base, with a small sharp-pointed curved bistoury, and cutting inwards through its centre; the opposite side of the bowel must be protected by the introduction of the finger, as previously directed." The author discovered, from personal experience, that it is better to use the speculum for this purpose than the finger, from the liability of inflicting severe wounds upon one's self, which we once heard a distinguished surgeon boast of having done. The dangers of extending the incision beyond the mucous membrane, when the fissure is situated in the anterior or posterior portions of the rectum, are clearly pointed out.

After giving, at page 93, Montegrie's almost interminable classification of hemorrhoidal affections, the author adopts that commonly accepted in England and this country, and divides them into internal and external hemorrhoids, "the former being those which occur within the margin of the anus, and involve the mucous membrane of the intestine, and the latter, those which are situated external to the shpincter ani, and are covered by the thin integuments of the anus."

A very good explanation of the nature of hemorrhoidal tumors, as at present understood, is given at page 94. "External hemorrhoids consist of the integument and cellular tissue into which blood has been extravasated, as a result of the congested state of the hemorrhoidal vessels, and determination of blood to them;" . . . . . . "generally the blood is encysted in a central cavity, having a smooth, glistening surface; in some cases there are several of these cavities filled with blood."

The serous hemorrhoid, first described by Mr. Howship, is mentioned as being "pale, elastic, shining, semi-transparent, and more frequently forming a ring around the verge of the anus, than appearing as a distinct tumor." The author cannot consider this as forming a distinct variety of hemorrhoidal tumor, "but as an edematous distension of the cellular tissue and thin skin of the parts, depending upon irritation in the immediate vicinity."

"Internal hemorrhoids, or the tumors constituting internal piles, consist of a morbid alteration in some portion of the mucous membrane of the rectum, and sub-mucous areolar tissue, with an augmented and abnormal development of the capillary vessels. Like the external variety, they were formerly considered to be a dilation of the veins." . . . . . . "But examinations on the living subject and dissections on the dead clearly demonstrate a different condition.

"A varicose state of the hemorrhoidal veins is not unfrequently met with; however, they form tumors very different in character, and in the symptoms they occasion, from those now under consideration.

"By dissection, internal hemorrhoids will be found to consist of both arteries and veins, the latter capacious, not in a diseased condition, but merely of abnormal development; the areolar tissue of the mucous membrane is hypertrophied, and if the tumors have existed long, and been subject to repeated inflammatory attacks, it will also be condensed." . . . . "To the touch they have a spongy, elastic feel, and by some authors are considered to resemble erectile tissue in structure; had they compared them to those abnormal developments of the vascular system termed aneurism by anastamosis, the analogy would have been more correct."

In mentioning (page 110) the influence of certain medicines among the causes of hemorrhoids, the author says, what perhaps some few of the profession in the west may remember with advantage, "Of all medicines, calomel, and the other preparations of mercury, have been productive of most mischief in the affections we are now considering, as well as other diseases of the digestive organs. It is not from the use of the mineral, but the general abuse, that the evil arises." We are not told the mode in which mercurials work this "mischief," but those who are in the habit of prescribing "heroic" doses of calomel, and frequently repeating them, can imagine it.

In describing the treatment of hemorrhoids, the author considers it "neither safe nor advisable" to remove internal piles by excision. He prefers the ligature, as being free from the various evil consequences, said by those who opposed its use, to follow its application; among these evils are mentioned phlebitis, diffuse inflammation of the cellular tissue, etc. The use of a double ligature passed through the centre of the tumor is recommended, instead of a single noose, because it will not slip, and because the tumor can be more effectually strangulated.

Nitric acid, and that horrid compound, the "deuto nitrate of mercury," are thought better than the ligature in certain cases, in which "the tumors are sessile, with florid granular surfaces, looking like half a strawberry." Neither of these substances should be used when "the piles are large and pendulous," because they are inefficient.

At page 187, in the chapter on "Abscess near the Rectum," we are advised to make an early and free incision, as soon as we are warned "by the accession of rigors, by the detection of fluctuation, or by a feeling of bogginess in the centre of the hardened part, of the existence of pus." . . . . . "Waiting till the superimposed tissues are thinned, and pointing of the abscess takes place, is a practice to be avoided, as the cavity of the abscess will increase, and there will be a greater probability of the bowel being denuded, or a communication being established by the formation of an opening for the exit of the matter through it, in which case fistula in ano is certain to be the result." There is nothing new in this, but there are many who are timid in opening these deep-seated abscesses and wait too long.

The chapter on Fistula in Ano, is good; it contains nothing new, but the modern ideas of the pathology and treatment of the disease, are well stated. The author insists, that it is not necessary to divide the sinus to the bottom, as was practiced by Liston and others.

The incision, he tells us, need not extend further upwards than the internal opening, which is situated almost always just above the sphincter ani.

The use of the ligature he condemns, unless in treating nervous people who cannot bear the thought of being cut.

We have no space to devote to the consideration of the chapters on Polypi, Stricture, Malignant Diseases, Injuries, Foreign Bodies, and Malformations. They contain a large amount of information of a practical character, with which the practitioner will do well, now and then, to refresh his memory.

The chapter on Habitual Constipation is too short, yet it contains some good suggestions. The following, from page 284, will show that the author entertains sound views, and that we come legitimately by the abominable habit of using purgative drugs for the relief of this troublesome disorder. "In the treatment of habitual constipation, the object to be attained, is the removal of the cause, to procure fœcal evacuations by the mildest and least irritating means adequate to the purpose, to restore lost tone, and prevent the recurrence of the torpid condition of the bowels. It is too frequently the case, the most inappropriate means are adopted to remedy this condition. Many people are in the habit of dosing themselves with calomel, or blue pill and black draught, or saline purgatives, which, besides teasing and tormenting the upper part of the alimentary canal for no fault of its own, is productive of very temporary relief and much permanent harm."

This notice is longer than we intended it should be, but we shall not regret its length, if we succeed in arousing the attention of even a few members of the profession to a much neglected branch of surgery.

Diseases of the Rectum are, most of them, so simple in the outset, and so easy of cure, as to leave hardly a valid reason why any surgeon should not be able to treat them properly, and successfully.

Mr. Ashton's book is very good. His language is plain and readily understood, his descriptions are clear, his opinions are based upon facts, and he reiterates the main points to be observed in the management of the diseases of which he treats, in a commendable manner. He does this in the text and in his illustrations by cases, in which he is profuse. We like the manner in which he insists upon the importance of a thorough examination before an opinion is formed, and the decided treatment which he recommends when this is done. He seems to have strong faith in the medicines which he directs to be used, and he is justified in this by the results he has obtained; further, he is a "hard-dosing islander," and it is to be expected from him. We think him a little vain of the success which he has had, but this is pardonable.

The illustrations are excellent.

PART II.—ESSAYS AND CORRESPONDENCE.

NOTES ON SOME OF THE CHEMICAL REACTIONS OF OXALIC ACID.

BY T. G. WORMLEY, M.D.

The solutions in the following investigations, were made by dissolving pure crystallized oxalic acid in water. 10 grains of the acid, when effloresced in a water-bath, lost 2.84 grs. Therefore, it must have had the constitution $HO,\ C_2O_3,\ 2\,Aq$.

When $\frac{1}{100}$th grain of oxalic acid in one grain of water is evaporated to dryness, it leaves a crystalline mass, consisting of long prisms. $\frac{1}{1000}$th, gives a very good deposit of rather long prisms. $\frac{1}{10000}$th, a very distinct deposit of small prisms and crosslets.

In the following experiments, the fractions refer to the fractional part of a grain of crystallized oxalic acid in one grain of water. A small drop of a very strong, or saturated, solution of the reagent, was applied to the drop of oxalic acid solution contained on a glass slide, or in a watch-glass.

1. *Nitrate of Silver.*

1. $\frac{1}{100}$th, grain of oxalic acid in one grain of water, gives with the reagent, a copious white amorphous precipitate, which is insoluble in acetic acid, and requires three drops of nitric acid of sp. gr. 1.32 to dissolve it; readily soluble in ammonia. The oxalate of silver is insoluble in very large excess of oxalic acid at ordinary temperatures; when the mixture is boiled, it dissolves very slightly. The above precipitate, when dried and heated upon the point of a knife-blade, is dissipated with several puffs.

2. $\frac{1}{1000}$th, a rather copious white precipitate, insoluble in acetic or tartaric acid; readily soluble in a drop of nitric acid. When dried and heated, it is dissipated rapidly, but not in puffs.
3. $\frac{1}{10000}$th, gives a pretty good deposit.
4. $\frac{1}{20000}$th, an immediate opalescence, which, in a few moments, becomes a good deposit.
5. $\frac{1}{50000}$th, much as in 4.
6. $\frac{1}{100000}$th, an immediate opalescence, which, after a little time, settles to a very satisfactory flocculent deposit.
7. $\frac{1}{1000000}$th, gives a quite distinct opalescence.
8. $\frac{1}{2500000}$th, after a little time, a perceptible cloudiness.

None of the above precipitates changed in color, even after they had dried spontaneously.

2. *Sulphate of Lime.*

1. $\frac{1}{100}$th, an immediate, quite good, white precipitate of oxalate of lime, which, when examined with an amplification of 100 diameters, consists of small granules. The precipitate is insoluble in acetic and oxalic acids, but readily soluble in nitric acid.

Chloride of calcium solution gives a more copious preciptate than the above reagent, and the deposit is in the form of little squares, somewhat larger than the granules given by sulphate of lime.

2. $\frac{1}{1000}$th, an immediate cloudiness, which soon becomes a quite good granular deposit.

Chloride of calcium gives about the same, but the deposit is in the form of small squares, which measure from $\frac{1}{3000}$ to $\frac{1}{7000}$ inch, whereas, the precipitate from sulphate of lime is in the form of small oval granules, uniformly measuring about $\frac{1}{10000}$ inch in their longest diameter.

3. $\frac{1}{5000}$th, almost immediate cloud, which soon becomes a good granular deposit.

4. $\frac{1}{10000}$th, very soon a very perceptible cloudiness, and soon a quite satisfactory precipitate.
5. $\frac{1}{20000}$th, after a little time, a quite distinct cloudiness.
6. $\frac{1}{50000}$th, in a few minutes, a just percepible cloudiness.

As nitrate of silver and sulphate of lime are the principal tests used in the toxicological investigations of oxalic acid, it is important to remember that many other substances will give a white precipitate with one or both of these reagents; among the principal of which are: soluble *carbonates*, *tartrates*, *phosphates*, *borates*, and *citrates;* also, *chlorides* and *sulphocyanides.* The salts of silver and lime, resulting from these compounds, differ in some respects from the oxalates of these two bases. The following are some of the differences observed: 1. The carbonates of silver and lime are *soluble* with effervescence in acetic acid. 2. Tartrates. *Nitrate of silver* gives, with a saturated solution of free tartaric acid, or an alkaline tartrate, a slight white precipitate, which is crystalline, or soon becomes so; the precipitate is very readily soluble in tartaric acid or an alkaline tartrate; therefore, if the free acid or alkaline tartrate is in excess, the reagent gives no precipitate. The precipitate produced by this reagent from oxalic acid, is amorphous, and wholly insoluble in excess of oxalic acid; the precipitate from $\frac{1}{50000}$ grain of oxalic acid in one grain of water, did not dissolve in ten grains of a saturated solution of tartaric acid, or an alkaline tartrate. *Sulphate of lime* gives no precipitate with a saturated solution of free tartaric acid, or alkaline tartrate. 3. Phosphates. *Nitrate of silver* gives, with a strong solution of an alkaline phosphate, a copious yellow amorphous precipitate; in a dilute solution, the precipitate is of a dirty white color, and might be mistaken for that produced by oxalic acid, but the precipitate from phosphoric acid is readily soluble in tartaric acid. *Sulphate of lime* gives, with phosphates, a white precipitate, which is readily soluble in acetic acid. 4. Borates. *Nitrate of silver* gives a precipitate which is insoluble in excess of the borate, but readily soluble in acetic or tartaric acid. *Sutphate of lime* gave a slight precipitate with a saturated solution of borax; chloride of calcium gave a dense white precipitate, readily soluble in acetic acid. 5. Citrates. *Nitrate of silver*, with free citric acid, gives a granular precipitate, readily soluble in citric or acetic acid; an alkaline citrate behaves much the same. *Sulphate of lime* gives no precipitate with free citric acid or an alkaline citrate; *chloride of calcium*, with citrate of potash, gives a precipitate soluble in excess of either solution. 6. Chlorine. The chloride of silver is insoluble in nitric acid. *Sulphate of lime* gives no precipitate with chlorine or a chloride. 7. *Sulphocyanide of potassium*, with nitrate of silver, gives a white precipitate insoluble in nitric acid; with sulphate of lime, it gives no precipitate.

3. *Chloride of Barium.*

1. $\frac{1}{100}$th, gives a quite good amorphous precipitate, which soon changes to granules, and after a little time, in most cases, to very fine bold dumb-bells, with some needles. The precipitate is insoluble in acetic acid. Nitrate of baryta, gave beautiful octahedra, but no dumb-bells.
2. $\frac{1}{1000}$th, in a few moments a cloudiness begins, which, in a little time, becomes a good deposit of needles and granules. If the mixture be rubbed, the precipitate is increased.
3. $\frac{1}{2500}$th, if the solution is rubbed with a glass rod, it gives, in a little time, granular rings and small crystalline needles.
4. $\frac{1}{5000}$th, after some time, small granules and needles are perceptible; with the microscope, they are quite satisfactory.

4. *Nitrate of Strontia.*

1. $\frac{1}{100}$th, an immediate precipitate, which improves, and soon becomes a good deposit of granules, plates, and fine octahedra; insoluble in acetic acid.
2. $\frac{1}{1000}$th, very soon, granules, squares, and some octahedra.
3. $\frac{1}{5000}$th, in a little time a distinct cloudiness, which changes to a rather good granular deposit.
4. $\frac{1}{10000}$th, in a few minutes a quite satisfactory deposit. Sulphate of magnesia gave no precipitate with a saturated solution of oxalic acid.

5. *Acetate of Lead.*

1. $\frac{1}{100}$th, a copious white crystalline precipitate, insoluble in acetic acid; the precipitate is a mass of crystalline needles.
2. $\frac{1}{1000}$th, a copious bluish white precipitate, which immediately begins to crystallize; insoluble in acetic acid.
3. $\frac{1}{5000}$th, a good precipitate, which immediately begins to crystallize in small stars.
4. $\frac{1}{10000}$th, immediate cloudiness, and soon small stars.
5. $\frac{1}{20000}$th, very soon, cloudiness, which changes to a quite satisfactory precipitate of granules, but no distinct crystals.
6. $\frac{1}{40000}$th, after some time a slight opalescence.

The acetate of lead is usually employed to separate oxalic acid when in solution with organic matter. 10 grains of a $\frac{1}{1000}$th solution of oxalic acid, was precipitated by acetate of lead, and the precipitate well washed with water, and then diffused in 10 grains of water, and a stream of sulphuretted hydrogen passed into the mixture; after the sulphuret of lead had subsided, the solution was filtered; the filtrate treated with various reagents, gave the same reactions as the $\frac{1}{1000}$th solution. The above shows that $\frac{1}{100}$th grain of oxalic acid may be changed to the oxalate of lead, and this decomposed by sulphuretted hydrogen, with the elimination of free oxalic acid, without any perceptible loss of the acid.

6. *Sulphate of Copper.*

1. $\frac{1}{100}$th. gives an abundant light bluish flocculent precipitate, insoluble in excess and in acetic acid; also insoluble in large excess of nitric acid.
2. $\frac{1}{500}$th, after a little time, a granular precipitate, which mostly floats upon the surface of the drop; the precipitate does not seem to be affected by a few drops of nitric acid.
3. $\frac{1}{1000}$th, after some time a slight precipitate, which dissolves in a drop of nitric acid.

7. *Chloride of Gold.*

1. $\frac{1}{100}$th, gives a slight precipitate of metallic gold.

8. *Extraction of Oxalic Acid.*

1. By *Ether*. If 1 grain of oxalic acid is dissolved in 100 grains of water, and this mixture agitated with an equal volume of ether, the ether decanted and evaporated to dryness, will leave but a slight trace of the oxalic acid.
2. *Chloroform*, under the same circumstances, will extract about .05 of a grain of the oxalic acid.

COLUMBUS, OHIO, Sept. 16, 1860.

ON THE CAUSES OF INSANITY.

BY RICHARD GUNDRY, M.D., DAYTON.

[Concluded from No. 1.]

We now approach a subject of deep interest, upon which much has been written and much controversy engendered. For men have differed, and will probably continue to differ, as to the special agencies concerned in the production of insanity, and adhere to views suggested less by any mass of testimony that could be adduced in their favor than by their own mental proclivities. Hence, in all ages, the *causes* of insanity have received attention from observers whose theories have equaled in numbers the observers themselves. Were it not for the sad consequences that have ensued from many of the opinions gravely promulgated, we might find a fund of merriment from looking over a collection of the hypotheses of both ancient and modern writers upon the causes which tend to the disorder of the mind. The Greeks maintained that Ajax was smitten with madness by the Goddess Minerva. To the anger of the offended Almighty has this great affliction been attributed by men neither ignorant nor fanatic. Dr. Barrows says, "Madness is one of the curses imposed by the wrath of the *Almighty* on his people for their sins." To such opinions may be credited much of the treatment the insane received in past—I wish I could add, remote—ages, when chains, footlocks, revolving chairs and systematic flogging, were adopted as aids to cure, as well as means of promoting effectual repentance, by which alone improvement was to be expected. Few men, I suppose, will advocate this doctrine in its gross form at the present day, yet a little reflection will show that reasons no more philosophical are constantly adduced by ordinarily thinking and observant men, to account for the origin of insanity in certain cases occurring within their cognizance. In no department of clinical observation is the *propter hoc* more frequently confounded with the *post hoc*. This will be very evident in any review of the causes *assigned*, as given in the reports of any institution; and in estimating the value of statistics on this subject, we must always bear in mind the tendency to this kind of error. A too great reliance upon the results of these tables, is certainly to be deprecated, for, without strict scrutiny, they will very probably mislead the inquirer. What the superintendent of the Provincial Lunatic Asylum at Toronto, Canada West, has humorously remarked concerning that country, may apply, in its general accuracy, to other theatres of action. After quoting numerous *causes* which had been assigned in the cases admitted into that institution, he adds:

"Now, if any one of the preceding wide-spread agencies may be regarded as adequate to the overthrow of reason, how many lunatics should this Province contain? Intemperance alone would people fifty asylums as large as our present one. Jealous husbands and wives would probably fill thirty. Bad treatment of husbands would equal intemperance. Political excitement would tenant a mad-house in every county, and one of superior class and size in the metropolis. Religious controversy would send in half the *clergy* of this Province, and large detachments of their congregations. Tobacco and slander would leave few in Canada at large. Excessive study, solar eclipses, love, inhalation of laughing gas, and remorse of conscience, would probably make up but a small aggregate. In 651 cases of lunacy admitted by me into this asylum, I have met with only one instance in which the last named agency was alleged as the cause, and the patient had not been very wicked. Religious excitement and religious despair both come in for their full share of censure, and yet we meet with few cases in which either can be regarded as purely causal." (Report for 1858.)

This view of the subject is not to be ignored, and yet there is another point to be taken into account also. What are charged as the causes of insanity, are oftentimes connected with its development in the order of precedence. They may indicate the circumstances which surrounded the patient about the time he became insane, and afford therefore a clue to the particular class of causative agencies to which his condition may be attributable. To record them, then, serves this useful purpose, that from the history of the patient, we can (so to speak) explore the weak points in the citadel where the enemy effected an ingress. An illustration from another class of diseases may better show this position. A lady with *carcinoma uteri*, had, before the disease appeared, been laboring under great anxiety concerning a near and dear relative, then absent from her, and in great peril. Under these circumstances, the symptoms of disease were first discovered by her. They had in a short time rapidly advanced. In her mind, and in the opinion of her friends, the connection of the mental disquietude and the occurrence of the disease, was regarded as very close, perhaps that of cause and effect. Nor was this very unnatural in her case. Now, no one would undertake to say that grief and anxiety produced *cancer ;* so, also, none would fail to see how important it was that they should be taken into consideration as elements in the etiology, how the knowledge of their existence would explain many facts, otherwise obscure—how they accelerated the advance of the disease itself by their depressing influence—what important part they must play in the future management and history of the case. Other examples will readily occur to all reflecting men, in whose practice cases somewhat similar have doubtless occurred. For the light which they thus reflect upon the history of prodomo of insanity, the *assigned causes* may be regarded as of interest, if the deductions drawn from them be cautiously received.

There is still another difficulty. Assuming the statement of causes to be correct, do they act as predisposing or exciting causes? The line between the two classes is very faintly traced and exceedingly hard to be discerned. A train of disordered emotions may predispose, in a certain case, to insanity, which may be excited by some slight physical evil. In other cases they may be reversed in their order. The table hereafter given, undoubtedly contains both classes promiscuously. We must form our own judgment from the probabilities as to the series they belong to. Nor must we forget that, in the great majority of cases, a combination of both classes of agencies is requisite for the overthrow of reason. "The popular tendency," says Dr. Ray, in one of his reports, "to refer every case to some particular cause, springs from a very superficial knowledge of the disease. Seldom, in fact, is it produced by any single incident or event. It requires a combination of adverse influences, each of which contributes to the result, though we may be quite incompetent to determine precisely the share which they respectively take. In using the term, *cause of insanity*, therefore, we mean to designate, not some particular incident having in itself the power of producing the disease, but rather one holding a prominent place in any combination of incidents more or less directly followed by insanity;" and the judicious Esquirol remarks: "This combination of physical and moral causes is much more frequent in the production of insanity than the isolated action of either of them."

In the following table I have endeavored to classify the different agencies assigned as the causes of insanity in the reports of 17 hospitals for the insane in the United States. I have condensed them under a few leading heads, and in doing so may have made some errors. That every-body would concur in the appropriateness of the class for the individual cause where I have placed it, I do not expect. To err in such a task is very easy, and to include, in tolerable limits, 111 distinct physical causes and 79 moral causes, gleaned from many documents, required no little care. I think no material errors have crept in. Both physical and moral agents are comprised in the following table:

	PHYSICAL CAUSES.	Males.	Females	Sex not specified	Totals.		MORAL CAUSES.	Males.	Females	Sex not stated.	Totals.
1	Ill health of various kinds....	813	1395	1502	3710	1	Grief from loss of friends, etc	203	542	433	1178
2	Zymotic diseases	78	96	69	243	2	Anxiety and care...........	214	190	170	574
3	Sporadic diseases of uncertain					3	Domestic difficulties.........	198	494	440	1112
	seat.....................	3	4	...	7	4	Business perplexities... ...	258	49	226	533
4	Diseases of nervous organs....	366	173	204	743	5	Loss of property....	228	63	48	339
5	" of respiratory "	23	36	1	60	6	Disappointed expectations..	28	29	172	229
6	" of circulatory "	4	3	3	10	7	" ambition.....	22	12	14	48
7	" of digestive "	35	69	27	131	8	" affections	136	154	195	485
8	" of urinary "	2	1	...	3	9	Ill treatment, persecution, etc	12	96	4	112
9	" of generative "	15	1383	...	1398	10	Fright and fear............	80	96	60	236
10	" of locomotive " ...	4	4	...	8	11	Religious excitement......	395	427	577	1399
11	" of integumentive org's	8	9	22	39	12	Political "	28	6	1	35
12	Old age, decay of............	25	17	1	43	13	Excessive study & application	184	38	355	577
13	Results of violence	184	45	130	359	14	Indolent habits............	18	6	...	24
14	Diseases of eyes and ears	5	1	...	6	15	Religious novelties..........	125	103	59	287
15	Exposure to sun, heat, cold, etc.	60	11	2	73	16	Jealousy	33	47	27	107
16	Intemperance	1184	117	463	1764	17	False accusations, etc......	9	4	2	15
17	" in use of tobacco	26	20	23	69	18	Mortified pride............	3	5	1	9
18	" in opium.......	10	21	8	39	19	Imprisonment for crime.....	10	...	...	10
19	Masturbation................	629	53	360	1042	20	Defective training.........	25	26	15	66
20	Excessive bodily labor........	78	78	...	156	21	Homesickness	8	17	5	30
21	Destitution	10	28	5	43	22	Seduction	...	43	..	43
22	Loss of sleep................	41	27	23	91	23	Remorse..................	3	7	1	11
23	Change of life....	..	127	...	127	24	Penuriousness.............	3	...	...	3
24	Want of exercise	10	2	...	12	25	Celibacy	2	4	...	6
25	Excessive pain.............	4	...	...	4	26	Anticipation of marriage...	...	1	...	1
26	Use of quack medicines.......	5	...	...	5	27	Unfit marriage............	4	2	...	6
27	Excessive use of medicine.....	3	1	...	4	28	Excess in light reading.....	4	5	..	9
28	Necrosis....................	...	...	1	1	29	Sudden accession of fortune..	3	...	1	4
29	Deficient nutrition—Grahamism	...	...	1	1	30	Joy	...	...	...	1

TALBE—*Continued.*

	Physical Causes.	Males.	Females	Sex not specified	Totals.		Moral Causes.	Males.	Females	Sex not stated	Totals.
30	Change of habits of life	...	...	6	6	31	Fortune being told	...	1	..	1
	Effects of cantharides	...	...	1	1	32	Enthusiasm	...	1	...	1
31	" of ether	...	...	2	2	33	Strike for wages	1	...	...	1
32	" of chloroform	...	...	1	1						
33	Somnambulism	...	1	...	1						
34	Drinking cold water	1	..	...	1						
35											
	Total physical causes	3626	3721	2855	10,202		Total moral causes	2237	2448	2807	7492
							Not ascertained	1837	1504	1780	5121
							Physical causes	3626	3721	2855	10202
							Moral "	2237	2448	2807	7492
							Not ascertained	1837	1504	1780	5121
								7700	7643	7442	22,815

I have added all cases where "hereditary transmission" * is assigned as the sole cause, to the unascertained. Congenital cases I have excluded from the list. The results of the 22,815 cases included in the analysis, may be stated as follows:

Physical causes	44.72	per cent.
Moral "	32.82	" "
Unascertained	22.44	" "
	99.98	

Or a little more than four-sevenths of the whole number, are ascribed to the influence of physical agencies, and somewhat less than three-sevenths to moral causes, if we work simply with those in which causes were assigned. This result is also affected by the sex to some extent. Thus among males:

Physical causes	47.09	per cent.
Moral "	29.05	" "
Unascertained	23.85	" "
	99.99	

Or somewhat over three-fifths are due to physical, and somewhat less than two-fifths to moral causes. Among females, this *three-fifths* belong to physical, and exactly *two-fifths* to moral causes, the disproportion being somewhat less than among men. The percentage among the women is as follows:

Physical causes	48.62	per cent.
Moral "	31.88	" "
Unascertained	19.47	" "
	99.97	

Let us compare these results with those obtained by observers in other countries. The statistics of the York Retreat for 40 years, show that the physical causes exceeded by 18 per cent. the moral.

The census of lunacy in Ireland for 1851, give 954 physical and 847 moral causes.

Aubanel and Thore report 7460 cases, of which 4631 originated in physical, and 2829 in moral causes.

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* I have avoided all discussion of the influence of hereditary tendencies in the causation of insanity. The statistics on this subject are very meagre and unsatisfactory, and difficult to collate. In my next report, therefore, I shall discuss this question.

Dr. Tuke analyzed 29,769 cases admitted into various asylums in England, France and America, and found three-fifths referable to physical, and two-fifths to moral causes.

The opposite view, that the moral greatly exceed the physical causes of insanity, is the more popular doctrine, and has the high sanction of distinguished authorities.

The reports of Bethlem Hospital record 980 from *moral*, to 571 from physical causes.

M. Parchappe, from an analysis of 976 cases, places *moral* causes at 67.1 per cent., and M. Guislain at 66 per cent.

Esquirol gives tables of cases, attributing 730 cases to *moral*, and 490 to physical causes. He gives a decided opinion that "Moral causes are much more frequent than physical."

Pinel, from the observations of five years, concluded that cases of insanity produced by moral causes, were, to those occasioned by physical causes, in the proportion of 464 to 219.

The opinions of such men are entitled to the most profound respect. Their impressions, gained during a long and observant experience, must lead us to scan very minutely and strictly the data upon which the conclusions opposed to those which they arrived at are predicated. With all allowance, however, for the errors of judgment which may vitiate the details of the tabular statement I have compiled, I am still satisfied that the general result deduced from it will not be impeached by more extended or more rigid observation, and it may be safely asserted that "the physical causes greatly preponderate in the origin of mental disease."

A rapid survey of the special classes of causes, comprised in this table, remains to be made.

Of the PHYSICAL CAUSES, the greatest number is returned under the vague and unsatisfactory term of—

1. *Ill health of various kinds.*—3710 cases are said to have thus originated. Of these, in 1502 the sex is not specified. 813 men and 1395 women, or 4 men to 7 women, became insane from this cause. Doubtless many diseases included in the other classes are returned under this name, for which due allowance must be made; but a majority may be said to labor under that phase of diseased condi

tion, which passes under such names as "general debility," "liver disease," etc., and in which, while no organ presents evident signs of disorder, the whole system seems involved in the trouble. Listlessness, languor, low nervous symptoms, and, above all, disturbed, unrefreshing sleep, are the more prominent symptoms. Usually but little attention is paid to this stage of disease, though analogous states of the system usher in a variety of chronic and fatuous disorders. Sir James Clarke has drawn especial attention to this general manifestation of depressed vitality in the incubation of pulmonary consumption, before the evidences of local lesion can be obtained, and the more recent discoveries of the nature of the obscure chronic diseases characterized as the commencement, by similar symptoms, made by Dr. Bright, respecting the kidney, and Dr. Addison regarding the connection of lesion of the supra-renal capsules with the "bronzed skin disease," indicate that this condition is very often, if not always, allied to some difficulty in the retrograde metamorphoses—some want of proper proportion in the excretions, and in general terms, that nutrition is defective. The channels by which this impaired nutrition reaches the brain are not clearly known, whether by disorders of the sympathetic nervous system, which may be probable, or by degenerative influences of the blood-vessels thus induced, as in some cases where the otheroma of the cerebral vessels has been traced; in either case imperfect nutrition of the nervous organs occurs—a pathological condition of some portion of the nervous centres is set up, of which the mental disorder is but the indication. Why it should affect the brain more than the lungs or the liver, etc., or why it should affect, as doubtless it does, the nutrition of one part of the brain substances more than the others, are questions which cannot be satisfactorily resolved, until we know why several persons exposed to the same influences should be affected injuriously in different organs; why cold should attack the pleura in one, the kidneys in another, or the joints in a third; or still more mysteriously, why rheumatism should prevail in the elbows of one man and in the knees of another. The large excess which appears in women whose insanity originates from "ill-health," would suggest that something peculiar to their condition or circumstances underlies the extraordinary phenomena. I avail myself of the graphic pen of Dr. Ray to trace the source of much of this evil. After describing this condition of "ill-health," as "a state of the system characterized less by any local affection than by a loss of physical and mental power, and by a host of uncomfortable sensations," he adds: "The form of the disease in question, arises, in a great degree, from excessive domestic labor, in conjunction with bad diet, bad air, insufficient recreation, and, in married women, frequent child-bearing. Of course it is confined to the classes that are obliged to give much of their attention and strength to the performance of domestic duties. It may, perhaps, require to be explained why insanity should be more prevalent here than it is in other countries among the corresponding classes which are supposed to be subjected to similar influences. The latter unquestionably work hard and fare hard, but they start with a stronger constitution; they are much in the open air; they live on plain food, and move in a social sphere that bounds all their wishes and aspirations. Here, however, the woman enters upon married life with a constitution somewhat delicate, either with little physical training, or one perhaps severe enough to have consumed no small portion of her physical power. Ambitious that her house and family should be distinguished among her neighbors by all the indications of good management, but unable to indulge in hired service, she labors beyond her strength, and does nothing towards restoring it by suitable relaxation. The cares of an increasing family, without increasing pecuniary means, seem to forbid the slighest rest from the daily routine of toil; her duties are all within doors, in overheated apartments; while a certain regard for appearances and a perpetual straining after a higher social sphere, give rise to an uneasy, if not repining state of mind. At last, the appetite fails, less and less food is taken into the stomach, the nervous system becomes irritable under the slightest impression, the sleep is diminished, the flesh reduced, and the mind is depressed by unaccountable gloom and apprehension. The end is now at hand in the shape of unequivocal insanity, from which recovery is tedious at best, and often hopeless." (*Sixth Report of Butler Hospital*, 1854, p. 26.)

2. *Zymotic Diseases.*—In this class are included 57 cases from diseases supposed to be connected with malarious influences. The eti-

ology of these is itself obscure, and equally or more so is the mode by which they affect the brain. That they do however accomplish this is susceptible of proof. *Typhoid fever* furnishes 135 cases—22 without the sex being specified—leaving 53 men and 60 women. This number is probably rather under than over the mark. Disturbance of the mind is not a very unfrequent accompaniment of typhoid fever. Dr. Flint has noted that delirium more or less marked all the cases of fever under his care, excepting a few of very slight gravity. "It is very rarely the case," says he, "that the faculties of the mind remain wholly unaffected during the career of continued fever." As the patient convalesces from the fever, the mind usually arouses from its hebetude or gradually throws off the delusions which harassed it, but this is not always the case. The mental habits are perpetuated by some agency beyond our means of actual proof.

3. *Diseases of the Nervous Organs.*—This includes 14 cases of apoplexy and 101 of paralysis, 57 of which were males and 35 females. Respecting the rest, 22, the sex is not mentioned. The course of these diseases, aside from the period after consciousness has been resumed, does not always involve mental aberration. They may recover gradually from the attack, or some loss of motion or sensation may result. In other respects, their powers appear unaffected. But when this is not the case, when the effusion (whatever it was, is not thoroughly resorbed), or the fibres have not renewed their continuity, or have imperfectly done so; it is probable that an exudation still remains to embarrass the brain, while the arterial capillaries may be plugged or the structure of their walls modified, in either of which cases the reparation of the brain is imperfect. 511 cases are traced to *epilepsy*, the connection between which and insanity and its non-pathology, I frankly confess I know nothing about. Two facts are however indisputable. Epilepsy does not necessarily induce insanity, but a large proportion of epileptics become deranged. Esquirol noticed that of 300 epileptic patients at the Salpétrière, upwards of 150 were insane; the same proportion was returned at Bicêtre and Charenton.

4. *Respiratory Organs.*—Phthisis is credited with 35 cases, 16 males and 19 females. Bronchitis operated in similar manner in 2

men and 13 females. Esquirol quotes the opinion of Hippocrates respecting the connection of the checking of the expectoration of phthisis and the wandering of the intellect, and adds, “that phthisis causes, or at least precedes mental alienation and alternates with it.” Dr. Buckerill, in an article in the British and Foreign Medico-Chirurgical Review, thinks that phthisis very rarely causes insanity. That they coëxist in many cases, will be admitted by all who have had charge of many insane persons, and that the pulmonary symptoms are masked to a greater or less extent, is also true. This may account in some degree for the non-recognition of it in its early stages. *Pneumonia* is noticed as productive of 4 cases only. From my own limited observation I had thought this was more frequently the case. Certainly the proportion of cases succeeding this disease which have occurred within my own observation, has been much larger than statistics indicate.

5. *Circulative Organs.*—Five of this class resulted from excessive loss of blood, four from disease of heart, and one of aneurism of aorta. In the diseases of the organs of circulation, we must expect some disturbance in the circulation itself, and probably more or less exudation from the capillaries in consequence. Where this occurs within the cranium and impinges upon the gray matter, or remains there a foreign substance, as the focus of irritation, the development of insanity may be easily accounted for. Moreover, this same condition of the heart or the large blood-vessels may in similar manner, by irregular or vitiated supplies of blood, impair the nutrition of the brain substance and destroy the beautiful equilibrium constantly maintained during health between watse and repair, incretion and excretion. This change is sufficient to precipitate an attack of insanity.

6. *Digestive Organs.*—The numerous and protean forms of digestive derangements exercise an important role in the overthrow of reason. So much have diseases of the abdominal viscera been connected with the development of insanity, that the great Pinel concieved that it usually depended upon disease of the stomach.* Indi-

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* He refers the primitive seat of mania “to the region of the stomach and intestines, from whence, as from a centre, the disorder of the understanding is propagated by a species of irradiation. A feeling of constriction, etc., manifests itself in these parts, soon followed by a disorder and trouble of ideas.” Mental Alienation, p. 20.

gestion occupies a high place in our list, 128—34 males, 68 females, and 26 sex not stated. The term is a vague one—a symptom being used as the description of the disease; and without much impropriety these cases might have been added to swell the numbers from "ill-health." As they were separated in the reports of the Institution I consulted, I assigned them their present position. What has been remarked with reference to the influence of "*ill-health*," being also applicable here, we need not be longer detained on this subject.

7. *Of the Urinary Organs* only 3 cases are given, and they are, nephritis, 2 males and 1 female. The absence of mental observation when calculi are present, has been alluded to by many authors, and they seldom, if ever, figure as the causes of insanity. Still I am not sure that diseases of the kidney itself and of the urinary apparatus in general have received their full share of attention in this respect. I shall however allude to this topic on another occasion, and therefore pass to notice—

8. *Of the Generative Organs.*—The most prominent causes in this class are those connected with the puerperal condition, of which 1050 are noted, while 8 were in consequence of miscarriages, and 24 from over-lactation. This subject is too important to be disposed of in the brief notice my limits would admit of in this place, but I may remark that a special investigation of this subject has enabled me to arrive at the following result: of 11,762 reported insane women in the United States, 1050, as above, occurred during the puerperal periods, or nearly 1 in every 11. To this I have added from various sources the following:

Authority.	Number of insane females.	Puerperal cases.
American Asyla	11,762	1,050
Reported by Dr. McDonald	691	49
" " M. Parchappe	596	33
" " M. Leller	97	11
" " Hanwell Asylum	703	79
" " M. Mittivié	242	9
" " M. Esquirol	1,119	92
" " Bethlem Hospital	899	111
	16,109	1,434=8.9 per cent.

or 1 to 11 insane women. The experience of Esquirol and other observers, derived from private practice, places the ratio much higher than this.

Uterine diseases and menstrual irregularities form the larger proportion of the balance in this class. Nor will this surprise any who are familiar with the ordinary history of uterine derangements. Few cases however of ulceration of the lips of the womb, of ammenorrhœa or of mennorrhagia, especially when leucorrhœa is excessive, pass through the stages of their condition without more or less mental disturbance. It may depend upon the extent of the disease, or upon the force of the mind, and the volition, how far this shall be carried, but I doubt whether a single instance ever occurred of derangement of the female sexual organs without more or less corresponding trouble of the mind, and especially of the emotions. There is always a marked tendency to "mental involution," if I may coin a phrase, to project exaggerated emotional and instinctive phenomena, to brood over, and by brooding to magnify minor evils, to loose the control of the judgment over the temper and feelings; in a word, there is always a relaxation of the power of the will, the essence and characteristic of hysteria. How is this intimate relationship kept up between the generative organs and the brain? Sympathetic action is the ready answer; but the term simply describes the fact, does not give any explanation of the mode by which that becomes an accomplished fact. The difficulty arises from the rapidity with which a disorder of the uterus excites an abnormal action of the brain. There seems no appreciable interval of time between the two. "Dr. Denman passed a ligature round a polypus of the fundus of the uterus; as soon as he tightened it, he produced pain and vomiting. As soon as the ligature was slackened the pain ceased, but whenever he attempted to tighten it, the pain and vomiting returned. The ligature was left on, but loose. The patient died about six weeks afterwards, and on opening the body it was found that the uterus was inverted, and that the ligature had included the inverted portion." I cannot offer any explanation of the process, but express my belief in the rule that lesions at the extremities of nerves, are very liable to disturb the process of nutrition at the centres, and that the disturbance of the central functions thus set up may be prolonged, after the peripheral cause has been removed. This is the case in tetanus oftentimes—in the diseases of dentition—in the effects of worms in the intestines.

But there are also other modes in which various sexual disorders may affect the nutrition of the brain. These I have only time to point out. In ammenorrhœa, the force, circulation, and possibly its constituents, become involved. This may affect the system generally, but following that mysterious law of "election," it may select the brain, in many cases, in which to expend its force, as we know it does in other organs; so in leucorrhœa, when it is persistent, it is not to be imagined that the pyogenesis which may have been established by a local lesion, is capable of being confined in its effects to any one portion. A blood poison thus engendered is not to be dammed up in the vessels of any part. It finds for itself a weak spot to attack, unless it can be eliminated by the appropriate excretory organs as fast as it accumulates. In one case insanity was noted as the effect of the first catamenial discharge. This result has been alluded to by Hippocrates.

In this connection (although not included in this category), we may allude to the fact that in 127 the change of life is stated as the cause of the attacks. Although this is of course a physiological change, it nevertheless so often marks the period of development of very grave diseases of the uterus and other organs—the appearance of carcinoma therein—tuberculosis—fibrous growths and other systemic changes—that to extend its influence to the nervous centres by modifying their nutrition, is neither impossible nor improbable. These cases also correspond to the class of diseases which have their origin at a similar period; they are usually incurable.

9. *Old Age.*—The irregular decay from advancing old age, may be a cause or it may constitute the disease itself. It may affect other organs and leave the brain comparatively unharmed. A Humboldt, at his advanced age, has his mental vision undimmed, though the failing body lagged behind the requisitions of the powerful mind. But with many it is far different. As the Indian apostrophized himself, "He was decayed like a lofty elm—the top boughs were fading and decaying, but the lower branches were still green and fresh." So,

with advancing years, the mind passes into swifter decay than the other powers.

10. *Violence.*—A large proportion of these were attributed to injuries of the head, of which 288 are collected—143 males, 25 females, and the sex of the rest was not stated. Molecular change, it is probable, occurs in these cases, followed by atrophy and degeneration, probably of an albuminoid nature, in a somewhat analogous manner to the wasting away of the testicle from blows. *Three* cases are given, produced by lightning stroke. The changes seen after death from lightning stroke, have generally been referable to the composition of the blood. When death does not immediately ensue, it is not improbable that similar alterations occur in the vascular system in a less degree.

11. *Exposures* to sun, heat and cold, to fumes of charcoal, etc., are causes well known in the production of mental disease. Dr. Kane, in his Arctic Voyages, gives a very vivid illustration of the effects of long-continued cold and exposure in rendering a party of his men delirious and maniacal.

12. *Intemperance*, occurring as the cause in 1764 cases, has been so often dwelt upon in this connection, that I need not add any thing to the many homilies given on this painful subject, further than to suggest that, while it operates as a cause in numerous cases, it also is sometimes found as a symptom and effect of insanity. The two classes are to be carefully distinguished. Of course, habitually or frequently over-stimulating the brain by strong drink, will cause many morbid and anomalous phenomena. They may be far from insanity, considered by themselves, but they form a train of circumstances in the series of events, the last of which is the overthrow of the reasoning faculties.

13. *Masturbation* is stated to have been the cause in 1042 patients. That this evil is of great magnitude, no casual observer in any of our hospitals will doubt, after witnessing the woe-begone countenances, the lack-lustre leering, and the libidinous, shameless experience of those inveterate cases which they will meet in the wards. It usually blights the prospects of the most amiable youth of our country, who often pass among their friends as models of propriety, and in whom

many fond hopes were centred; those in whom no previous reckless temper had been developed, and indeed in those whose *public* conduct had been most circumspect and moral. Usually, the character is rather of a negative order, characterized by the absence of very marked features for good or bad

The remaining causes enumerated, are marked as having but slight effect, and many of them apocryphal.

No serious argument is necessary to show why "drinking cold water" is not a moving cause of insanity, and grave doubts may be felt as to the influence of chloroform, ether and cantharides. The use of quack medicines, and the excessive use of medicines, might rather be regarded as indications of insanity than causative agents in its production. On the contrary, *loss of sleep*, to which are charged 91 cases, doubtless contributed much more largely than these numbers would indicate. I shall have occasion to refer to this in treating of the moral causes.

MORAL CAUSES have popularly been regarded as the most prolific source of mental disorder. That they are largely concerned, as part of the combination of circumstances which together thus act, there can be no doubt. That they often appear to be the most prominent member of this combination, is also certain. But still, their precise share in the transaction has not been fully determined, even by the most strenuous advocates of their preponderating influence. Assuming as true, that morbid mental manifestations denoting insanity, only occur in conjunction with structural alterations of some portion of the nerve centres, and in consequence of some morbid condition consequent thereon, it remains to be shown how far purely psychal phenomena can produce such changes.

The following two propositions will probably cover the whole ground:

Very powerful moral agencies can produce such cerebral changes without any other cause.

This is not the usual mode, however, by which moral causes act. They more generally set in motion or concur with a train of physical disturbances, through which the cerebral changes are in turn effected.

These propositions do not contradict the dogma that insanity never results from the operation of moral causes without some physical departure from health.

By the first proposition, we suppose the effect of moral causes upon the brain to be *direct.* Emotions wrought upon to an exceptional degree, will occasionally expend their force in this direction to the production of insanity, without any intermediate agency. The same influence is seen in other portions of the body. The injurious effect of anger upon the milk of nursing women, and the rapidity of its operation, are well known. How the bladder is affected by the emotion of *fear*, is well illustrated by the soldier on the eve of battle, and by the medical student about to enter the examination room. That the brain is also affected by similar causes, instances are not wanting to show, though the result is more often active inflammation of the brain than insanity. Of the latter, the following case, reported by Dr. Skae, of Edinburgh, is the best authenticated example I have ever read of, of insanity resulting in this way: A "female, who had been born and spent all her life in the lonely island of Uist, the *ultima thule* of Scotland, came to Edinburgh to visit her friends, and unfortunately arrived at the time of a great Masonic procession. She was dragged through the streets of Edinburgh by her kind friends for several hours, to witness this grand pageant, and the excitement to the poor young woman, who had never before seen any thing but Shetland sheep and ponies, proved so great that she was brought to the asylum the same evening in a state of raving mania." A moral cause may be present so overwhelming in its effects, as to prove fatal, or to produce a state of alarming syncope, an utter prostration of the whole system. Recuperation from this state, discovers the mind to be grievously injured, and generally in a state of dementia. In both cases the effect is instantaneous. Thus, the prophet Eli, when he heard that the Israelites had fled before the Philistines, and that his sons had been slain, and that the Ark of God had been taken, fell back dead. The history of the atrocities of Alva in the Netherlands—of Claverhouse and his troopers against the Covenanters of Scotland, furnishes many instances of the mind being utterly overwhelmed by the sudden and fearful trials of those terrible times.

The glowing pages of Macaulay contain a very striking illustration of the same principle. Ornichund, one of the agents of Clive at an important juncture, seemed likely to play false. It was important to keep him quiet, as he had the key to the intrigue, and a word from him could ruin Clive and his coadjutors. He demanded three hundred thousand pounds sterling as the price of his secrecy and assistance. This was promised. "He had demanded that an article touching his claims should be inserted in the treaty between Meer Jaffier and the English, and he would not be satisfied unless he saw it with his own eyes. Clive had an expedient ready. Two treaties were drawn up, one on white paper, the other on red—the former real, the latter fictitious. In the former, Ornichund's name was not mentioned; the latter, which was to be shown to him, contained a stipulation in his favor." After the battle of Plassy, when Clive was secure, and had placed Meer Jaffier on the throne, "the new sovereign was called upon to fulfil the engagements into which he had entered with his allies. A conference was held at the house of Jugget Leit, the great banker, for the purpose of making the necessary arrangements. Ornichund came thither, fully believing himself to stand high in the favor of Clive, who, with dissimulation surpassing even the dissimulation of Bengal, had, up to that day, treated him with undiminished kindness. The white treaty was produced and read. Clive then turned to Mr. Scrafton, one of the servants of the Company, and said in English, 'It is now time to undeceive Ornichund.' 'Ornichund,' said Mr. Scrafton in Hindostanee, 'the red treaty is a take in. You are to have nothing.' Ornichund fell back insensible into the arms of his attendants. He revived, but his mind was irreparably ruined. Clive, who, though unscrupulous in his dealings with Indian politicians, was not inhuman, seems to have been touched. He saw Ornichund a few days later, spoke to him kindly, advised him to make a pilgrimage to one of the great temples of India, in the hope that change of scene might restore his health, and was even disposed, notwithstanding all that had passed, again to employ his talents in the public service. But from the moment of that sudden shock, the unhappy man sank gradually into idiocy (dementia). He who had formerly been distinguished by the strength of his understanding and the simplicity of his habits, now squandered the remains of his fortune on childish trinkets, and loved to exhibit himself dressed in rich garments and hung with precious stones. In this abject state, he languished a few months, and then died."

Admitting therefore the full influence of sudden and powerful moral causes, in the production of those morbid phenomena on which insanity depends, it must not be forgotten that this is not the uniform nor even the more customary mode by which moral causes produce insanity. They more frequently act indirectly, by setting in train a series of morbid physical processes which terminate in the production of insanity. Less prompt in their action, they proceed in the work of degeneration slowly, but in a variety of ways, only a few of which I shall have time to notice. Or they concur with some physical cause, in precipitating an attack, and this is probably most frequently the mode of their connection in the etiology of disease than any other. "Many are the instances in which numbers as well as individuals have escaped a prevalent disease, until depressed by some unhappy event or apprehension, and then they have fallen victims. Such was instanced in the ill-fated Walcheren expedition, and in many passages in the history of armies in pestilential countries. A defeat, a failure, or even bad news, made many succumb to the pestilence who had before escaped." Every physician can recall from the treasures of his own memory, of a period of cholera or other epidemic, many instances of the effects of fear, grief, and other depressing emotions, in promoting the spread of the disease.

The tendency of long-continued mental operations upon the body is susceptible of varied illustration. The influence of a happy, cheerful disposition to produce a comfortably stout body is proverbial. Nor less so the tendency of peevish, anxious, worrying tempers to be associated with lean, lank, hungry bodies. The emotions of fear, grief and anxiety, from whatever circumstance arising, if long continued, cause well marked departures from the physical health of the individual. The temperature is depressed, the secretions from the mucous membranes are checked, and in short, nutrition is seriously interfered with. Cardiac diseases—dyspepsia and low forms of fever—

are the most frequent sequences. Even in those persons whose power of resistance is strong, a pale, anxious countenance, a decreasing appetite, and a loathing of food, are very often met with. Thus an impaired nutrition is established, sufficient alone to produce an attack of insanity, most probably on account of the spanæmic condition of the blood, induced by the imperfect material supplied for the elaboration of cells.

The emotions of anger, revenge, jealousy on the other hand, affect the circulation in a very different point; they accelerate the heart's motion by increase of involuntary muscular action; the tendency to irregular gesticulations and muscular contractions is also increased. Irritability, congestions, hyperæmic states, and actual inflammations of various organs, but especially of the brain or its appendages, may result. Thought long-continued, whether from over-study, from the strain upon the attention, from business perplexities, from the *exclusive* study of any one object, may so exhaust the nervous energy as to render it incapable of appropriating proper nutrition, and produce that condition of nervous excitability and hyperæsthesia characterized by rapid impressions without force. In these different directions may moral causes open the avenues to mental disorders. I think it will be found that all or nearly all moral causes may be be ranged with one or the other of these classes. Oftentimes more than one of them may be present in the same case.

Where any of these causes have been at work, the recuperative powers which nature interposes to check their inroads, however energetic at first, are gradually weakened, and finally succumb. The chosen defense of the brain is sleep, which, useful to restore the tired and weary frame in every portion, is absolutely necessary for the restoration of the exhausted brain. And for this purpose it must be sound, healthy sleep. This is the last anchor, and when this is gone the poor vessel drifts before the merciless storm, little heeding any helm.

A careful analysis of the experience of those accustomed to treat mental disorders would, it is probable, considerably reduce the numbers of those in whom the disease can be ascribed to a purely *moral* cause, acting even indirectly as we have seen. A larger number of those supposed to be thus derived, would be found to be due rather to some physical evils, acting or coincident with the assumed *moral* cause. Comparatively a very small portion will remain to be charged to the *direct* action of these agencies. A consideration of a few of the assigned causes of a moral nature included in the previous table will end our discussion of this question.

Religious excitement accounts for 1399 cases, or 18.67 of those ascribed to moral causes. In popular estimation it undoubtedly occupies a prominent place among the causes of insanity. It is very questionable, however, whether the amount of insanity which can be traced to this source is not in reality quite inconsiderable. The first symptoms of mental disease are not unfrequently evinced by some singular or extreme notions of religious truths and duties, or of the relation sustained by the party in his religious character, and these expressions or acts are often confounded by friends with an awakening to the importance of religion, or what is termed a "season of conviction," and subsequent unmistakable acts of insanity are by them attributed to these supposed exercises of the soul; yet in truth a further examination would have satisfied them of the existence of causes lying far deeper than these, and that, in many cases at least, the religious fervor, etc., were perhaps the last efforts of a mind, instinctively feeling itself failing, to reëstablish control over impure and unholy passions. I do not know how the experience of others would teach, but it has happened that the investigation of numerous cases attributed to religious excitement or depression, has led me to the unwilling conviction that they were to be charged, in quite a large proportion of cases, not upon any opinions of religious doctrines—to no deep concern to conform the actions to religious precepts, but simply to a long career of vice, and especially of masturbation, which had been for a long period gradually undermining the integrity of the mind, and the religious enthusiasm, or fear, which attracted attention, was only a *recoil*—an expiring, but abortive effort to reach the purity daily growing more and more distant from their reach. In some cases, the awful terrors of the Law may assume some horrible shape, and fasten, as a delusion, on the judgment, or the mind may project into distinct hallucinations some truths which the memory furnished. They may believe themselves to have unclean spirits; that they hear angels and their Saviour converse, or that they see them; that their souls are lost because they have committed an unpardonable sin; that God directly commands them to do extraordinary acts, and a thousand similar fantasies may gain possession of them, all having a religious association. But this does not indicate, by any means, the *religious origin* of the disease, any more than delusions of any other character. Men think themselves Presidents or Kings; they rule thousands; they constantly harangue on political or financial topics; they buy and sell largely; they are wealthy as Crœsus, or every thing they see or own is turned by them, Midas-like, in gold or gold-producing means; without having been made crazy either by political excitement or business or financial troubles. Equally may delusions of a religious character be entertained by men who, when sane, were never influenced by religious principles, as well as others may mourn their lost condition—their enormous crimes—their deep despair of salvation, who, before disease invaded them, were in every respect exemplary for their Christian demeanor. To charge upon religious exercises such results, in these cases, would be no more philosophical than to mistake for medical philosophy the exquisite humor of the gentle "Elia," when he elaborately describes the *melancholy peculiar to tailors*, and learnedly traces its origin to their errors of diet—their devotion to cabbage! So, also, where the origin of the disease can actually be traced to a time when the patient experienced deep religious interest, it is not unfrequently to be ascribed less to any overpowering effect upon the mind of any doctrines or ideas, than to some well-marked violations of the ordinary laws of life. A minister at a camp-meeting preached for seven days and nights, taking only broken and disturbed rest, suffering from headaches, until at last he becomes a raving maniac, and continually gesticulates as if rousing the ungodly to repentance with incoherent vehemence. Another, with greater endurance, continued similar services for sixteen days and nights, with a like result. Was it religious fervor that overpowered these men, or was it the over-exertion of the bodily powers—the constant tax on the wearied brain—the terrible tension of the nerves? These, added to the want of the natural restorative, sleep, are surely sufficient to account for the effects produced. During camp-meetings and revivals, what mental harm results is less from any moral or mental impression produced than from its coincidence with a state of ill-health at the time, or the loss of rest, unnecessarily endured, or other equally erroneous course of conduct. A sound, healthy person may devote his energies to the investigation of religious subjects; he may become deeply interested therein to the exclusion, for a time, of every thing else; he may listen to the discourses of those whose appeals rouse the overwrought emotions to their highest pitch; but rarely, with ordinary prudence, does such a one become insane in consequence of these mental exercises alone. On the contrary, that which directs a man's attention to the most important problem ever to be solved by him—his relation to a future destiny; which attracts him to the contemplation of an example of purity; which turns him from doing wrong to doing that which is right; which changes him from a bad to a good man; which, showing him the errors of a past life, points out the path to be followed in the future;—call this excitement or interest or what you will, it is calculated rather to conserve than to destroy his intellectual vigor. In short, those whose lives are best marked by the quiet, calm and unswerving trust of the sincere Christian, are, other things being equal, best prepared to resist the operation of the multifarious tendencies to mental derangement which beset us all on every hand. Dr. Tyler, in his report, mentions that the very general religious movements in 1858, had produced no cases of insanity within his knowledge, and justly observes thereon: "Whatever, in the experience of the year, has, on the whole, taught men to think less anxiously for themselves, and more kindly and carefully for others—whatever has effectually abated self-conceit, and led to genuine benevolence of thought and deed, has lessened their liability to mental alienation."

In one of the earlier reports of the Ohio Lunatic Asylum at Columbus, Dr. Awl states: "As the result of some attention to this matter, we feel satisfied that the true remote cause of insanity *very frequently lies behind the religious influences* which appear so conspicuous, that, at most, religion can only be accused as the *occasional or exciting cause of a disease whose foundation is completely established in the system.*"

And Dr. Copeland eloquently observes: "Among those who entertain just and sober opinions on religious topics—who make Christian doctrines the basis of their morals, the governors of their passions, the soothers of their cares and their hopes of futurity, insanity rarely occurs. The moral causes of derangement, which would not fail of producing injurious effects on others, prove innocuous in them, for these causes would be met by controlling and calming considerations, and sentiments such as would deprive them of intensity and neutralize their effects. Truly religious sentiments and obligations soothe the more turbulent emotions, furnish consolations in affliction, heal the wounded feelings, administer hopes to the desponding, and arrest the hands of violence and despair." While, therefore, it is not to be denied that undue religious excitement may sometimes aid in the development of insanity, it is submitted that it forms a much less efficient cause than it is popularly regarded, and the cases in actual practice, due solely to this cause, are exceedingly rarely, if ever, met with.

Business perplexities, domestic troubles, loss of property, and other troubles, enter largely into the list of moral causes of insanity. They are all modifications of *anxiety* and *care*, and, no doubt, are very efficient members of the combination of circumstances which precipitate an attack of insanity. Yet when we consider the large number who are harassed with business and other trials, who are bowed down by domestic trials, and the small proportion of these who become insane, we cannot avoid the conclusion that other elements must be necessary to give force to these agencies. They must act upon an organization disposed to the disease, either by hereditary taint or by some cause existing but unknown to us, whereby the brain becomes more susceptible to their influence. Various other diseases, it is well known, are developed from these causes.

Grief, fear and jealousy are, perhaps, most prominent, as indirect moral causes, acting, as we have already pointed out. Yet in these, also, other elements, either set in motion by them or present when these began to act, will naturally be suggested by the fact that neither grief nor fear nor jealousy renders all its victims insane. The most cognizable, and perhaps the absolutely necessary element in the case, is an alteration in the quantity or quality of sleep. When trouble of any kind so operates that sleep is banished, especially when no desire for sleep is generated, the brain, which is the organ of all others the most dependent upon the recuperative powers of sleep, is rendered very liable to attack. Nor is it in the absolute want of sleep alone that we may trace this result. Its depravation is almost as bad in its consequences. Unrefreshing slumbers, disturbed by fearful dreams, such as Young alludes to—

> "From short as usual, and disturbed repose
> I wake emerging, from a sea of dreams
> Tempestuous"—

leave the body wearied and the mind harassed and incapable of its proper duties. In a few cases, I have had the opportunity to observe that the attack was ushered in by extreme sleepiness—a desire for sleep unsatisfied by any indulgence—a constant drowsiness, more allied to stupor than the calm repose which nature grants to all creatures in health. All these variations in the character and quality of sleep are worthy of note, for, as a general rule, it may be stated that however much mental or bodily fatigue, however much trouble or grief or anxiety or brooding cares of any kind may be experienced, so long as good natural sleep can be obtained, no great evil will result; but none can with impunity disregard this great law of our existence—the necessity of rest.

> "Sleep, that knits up the raveled sleeve of care,
> The death of each day's life; sore labor's bath—
> Balm of hurt minds, great nature's second course,
> Chief nourisher in life's feast."

In the first report of the State Asylum of New York, at Utica, in 1844, Dr. Bingham emphatically remarks: "In our opinion the most frequent and immediate cause of insanity, and one the most important to guard against, is *the want of sleep.* So rarely do we see a recent case of insanity that is not preceded by want of sleep, that we regard it as almost the sure precursor of mental derangement."

PART III.—FOREIGN SELECTIONS.

CYSTIC BRONCHOCELE.

BY DR. HUGO SENFTLEBEN.

[Translated from *Virchow's Archives*, for the Columbus Review, by C. E. Boyle, M.D.]

The treatment of cystic bronchocele has been materially advanced by the adoption of repeated iodine injections. Even the Vienna School, which, at first, declared against this mode of treatment, now acknowledges its advantages. There are those, however, who still pronounce it fruitless and dangerous. The result, in a great measure, depends on the nature of the tumor—if a simple cyst, injections of iodine are almost certain to result successfully. In multiocular cysts, portions of which are indurated, inflammation and suppuration usually follow. Unfortunately, the pathological anatomy of these strumæ is not as well understood as could be desired. They seem, however, to be analogous to cystic tumors of the ovary. Their walls contain a structure similar to soft colloid, and upon their inner surface is distributed a coarse net-work of delicate capillary blood-vessels, forming papillary projections, which, when wounded, are the cause of hemorrhage. In this arrangement of delicate blood vessels, we probably see the source of the so-called blood-cysts, which have been so long an enigma to surgeons.

Ferguson relates, in his System of Practical Surgery, the case of a woman who had upon the left side of the neck a fluctuating tumor the size of an orange, corresponding to the left lobe of the thyroid gland. An incision one inch long being made, and the serous contents evacuated, the finger was introduced, and a uniformly thin, smooth sac, about the thickness of the dura mater, was felt closely lying upon the carotid artery. The cavity filled at once with blood, and as soon as this was evacuated, it filled again. It was packed with lint, and, although blood oozed out for some time, no ligature was needed, except for a superficial vessel. After the removal of part of the sac by suppuration, cicatrization followed. The hemorrhage was manifestly from the recently formed delicate vessels of the sac.

Upon the left side of the neck of a woman, aged 40 years, there occurred an encysted tumor. To the finger it felt like an atheromatous growth, and its contents could be displaced by pressure. Even before the sac was entirely perforated by an incision for exploration, hemorrhage occurred from its external surface, but as soon as the cavity was opened, a forcible jet of blood came out. In a wound not much more than an inch long, four vessels had to be tied. The sac was lined with cauliflower-like excrescences, which bled freely when touched.

With the history of the following case, I also give an analysis of the first evacuated contents:

H. H., æt. 23, a servant girl from Hesserode in the Hartz, was received in the surgical clinique, May 6, 1859. She was a healthy looking person, with a flat thorax, but normal respiration. Her father died in his 47th year, of phthisis pulmonalis. Several of her immediate relatives died in early youth. In her twelfth year, she had typhoid fever, six weeks in duration, but was not bed-ridden by it. At 17 she menstruated, at first sparingly. One year before her admission, she suffered several months with cramping of the stomach, and at the same time with menostasia. Since her 11th year, she has observed a swelling as large as a walnut upon the right side of the throat. At first it grew gradually. In the past five years, the swelling has been developed more rapidly—i. e. since the patient menstruated. Iodine, both internally and externally, had been used for some months without effect. At the time of admission, the swelling had reached the size of a child's head, was slightly movable, largest transversely, and undefined towards the upper part of the trachea. The tegumentary coverings were non-adherent, and normal, the swelling itself fluctuating in all its circumference, but not translucent upon the application of artificial light; voice but slightly altered, moderate dyspnœa upon rapid movement or ascending a pair of stairs; heart sounds normal. On the 12th of May, just after the patient had menstruated, Mr. Lungenbeck injected, after puncture with a trochar, six drachms of the following solution: ℞. Iodine puri. scr. ij, iodid. potas. drs. iv., aqua. destil. unc. iv. The color of the evacuated fluid was dark-red-brown, without smell, weak alkaline reaction, and yielded an unimportant sediment, recent and old blood corpuscles. The entire quantity amounted to about 15 ounces—s. gr. 1.03108. The determination of the amount of albumen was by Berzelius's method. $2\frac{1}{2}$ oz. of the fluid contained: Albumen=5.7952; extractive matter=0.119; fatty matters=0.144; insoluble salts=0.134; soluble salts=0.78. Upon the evacuation of the tumor, it collapsed. The fluid injected was retained a few minutes, and then about one-half of it discharged. The second day after the operation, the swelling reached the size of a man's hand, and fluctuation was distinct. Twelve days afterwards, its volume had reached nearly two-thirds of its former size, when a second puncture was made, and a quantity of clear red fluid discharged. This had an alkaline reaction, and contained a large number of red blood corpuscles. One ounce of tinct. of iodine was then injected, the most of which was withdrawn. A slight febrile reaction occurred after the first injection, but following the second none appeared, the patient remaining quite well. The sac had been sensibly thickened, and the whole mass was more indurated. Fifteen days after the second, a third puncture was made, and another ounce of the tinct. iodine injected, the most of which was retained, producing but slight tenderness over the sac. During the following eight days the tumor increased in size, fluctuation again appearing, and then for three weeks it remained stationary. Finally, upon the daily application of tincture of iodine externally, the tumor suddenly diminished in size, and fluctuation disappeared—the energetic use of iodine in the mean time producing slight iodism.

The patient left the institution on the 14th of August, when the swelling was no larger than a crab-apple, and perfectly solid—her general health being quite restored.

HYDRATE SESQUIOXIDE OF IRON AS AN ANTIDOTE FOR ARSENIC.—M. Fasoli has made several experiments on small dogs in good condition, to ascertain the value of the hydrated sesquioxide and hydrated sulphide of iron, as antidotes, in cases of poisoning by arsenious acid. He poisoned nineteen dogs, with varying quantities of arsenious acid. Of these, five, to whom no antidote was administered, died. Of the other fourteen, which were treated with the antidotes, twelve recovered, and only two died.

We have no details of the experiments, and so have no means of estimating their value.—*Report. de Pharm.*

PART IV.—BI-MONTHLY ABSTRACT.

SURGERY.

Bismuth in the Treatment of Burns. (Am. Med. Monthly and N. Y. Review, Sept. 1860.)

In the July number of the *North American Medico-Chirurgical Review*, Dr. T. G. Richardson recommends the treatment of Scalds and Burns with the subnitrate of bismuth and glycerine, the parts to be covered with cotton batting. He says:

"I was induced to give it a trial from a consideration of its well-known effect in calming irritation, and even actual inflammation occuring in mucous membranes, the condition of these structures under such circumstances bearing a very close analogy to that of the skin after a burn of the first or second degree. When I first began its use I combined it with linseed oil in such proportions as to form a consistent paint, but subsequently substituted glycerine for the oil, and I am now inclined to think that the combination can never be surpassed, since by it every local indication is fully met." "In burns of the first degree, one such application will often suffice; but in those of the second degree, it may be necessary to repeat it, in part at least, from day to day, in consequence of its disturbance and the wetting of the cotton by the subjacent discharges."

A Case of Abscess in the Walls of the Bladder, reported by S. Brandeis, M.D. (Louisville Medical Journal.)

"Mr. ——, æt. about sixty, born in Austria, arrived in this city on the 9th of June, 1859. He came from Europe *via* New Orleans, and without stopping on the way. He stated that he enjoyed the most perfect health, with an appetite almost voracious during the voyage to New Orleans. He came from that city to this by steamboat as a steerage passenger, and while ascending the river he fell sick, but of what disease he could not inform me. He could only tell me in regard to his illness that during its continuance he had much thirst, drank large quantities of river water, and, for thirty-six hours next preceding his arrival here, suffered from retention of urine and constipation of the bowels.

"I saw the patient at 4 P. M. on the day of his arrival, and found him in the following condition: Body emaciated; skin warm and of a yellowish tint; perspiration profuse; face expressing great anxiety; respiration quick and short; pulse 120, and feeble; tongue heavily coated and dry; abdomen distended, especially in the hypogastrium; percussion in that region dull and in the neighborhood tympanitic; bladder evidently distended; the lower extremities cold, mottled, and œdematous. The cutaneous veins were flattened and visible through the skin.

"A catheter was introduced, and through it a gallon and a half of red, brown, muddy, stinking urine was discharged. The evacuation of the bladder occupied about ten minutes. The contraction of this viscus was so insufficient that its contents could not be discharged without the assistance of my hand, pressed upon the hypogastrium. The relief of the pain and other distressing symptoms of retention was complete. An active dose of calomel and comp. ext. colocynth, to be followed by an effervescing draught, was ordered.

"June 20th. The patient passed a quiet night. He slept soundly for several hours. The bowels were moved, and at the same time some urine was passed. Skin cool and moist; œdema of the lower extremities somewhat less; appetite returning; but the bladder is again distended.

"The catheter was again introduced and about a gallon of urine, not so offensive in odor as the first, drawn off. I directed one-twentieth of a grain of strychnine to be taken twice a day, an ointment of belladonna to be applied to the perineum, and small pieces of ice to be swallowed at intervals in place of copious draughts of water.

"This treatment was continued for about two weeks. The catheter was introduced twice a day. I tried to leave the instrument in the bladder so as to allow the urine to escape continuously, but the patient would withdraw it. During the interval mentioned the patient spent the days out of bed, took his meals with evident relish, and appeared cheerful.

"Towards the end of the third week some pain in the perineum, and ischuria came on. The introduction of the catheter became difficult. I succeeded in the introduction of the instrument at the second effort. A coagulum of blood was withdrawn with the catheter, and some bleeding followed. I was unable to determine the cause of the difficulty of the operation. Opiates were administered by the mouth and rectum. Emollient drinks, and warm fomentations to the perineum, were ordered.

"At the end of two days the retention of urine subsided, to be replaced, however, by incontinence. The patient had to pass his urine at very short intervals, discharging but a spoonful at a time. The urine was red-brown, muddy, and exceedingly offensive in its odor, and, on examination with the microscope, presented blood and pus corpuscles in great abundance.

"The patient now complained of pain, extending from the lumbar vertebræ to the false ribs of the left side. He soon after became delirious. He replied to questions vaguely, and lay the most of his time in a state of semi-stupor. He vomited frequently; the vomited matters had a urinous and ammoniacal odor. The perspiration was offensive. The breath was loaded with ammonia. (This was tested by holding a rod moistened with muriatic acid before the mouth.) The pulse was rapid and feeble.

"Prof. Goldsmith was called to the case with me. From the consideration of the symptoms mentioned above, we came to the conclusion that there must be acute nephritis, and inflammation of the bladder. The patient died on the 27th of July, at 11 o'clock, P. M.

"*Post-mortem appearances, nine hours after death.*—We opened the abdomen only. Peritoneum a little injected; no adhesions; no unusual amount of serum.

"The kidneys were both enlarged, the right to about twice its natural size, and the left to about once and a half its natural size; from each the capsule was easily stripped. The left kidney contained several serous cysts, the right two. Both organs were of a mottled mahogany color, very succulent, and somewhat softened in texture. In the right numerous scattered yellowish elevations were noticed, and a few in the left. These papillary prominences were found to contain pus globules and other inflammatory products. In a section of the kidney, yellowish lines could be traced along the tubules to all of the papillary prominences. Several little, rounded abscesses were found at different points in the tubular structure of each organ. The tubuli renales were enlarged and their lining membrane yellowish and thickened. The ureters were not much affected; they contained some pus and blood globules.

"The bladder, somewhat contracted, contained about six ounces of urine. The muscular coat was very much thickened. The mucous coat was thickened also, but not softened—its surface, of a dirty gray color, was regose, and covered with a croupous, tough, and adherent exudation, like that so frequently seen in acute dysentery.

"On the side near the opening of the right ureter an aperture, large enough to admit the finger, was found leading to an abscess in the walls of that side of the bladder. This opening was smooth-edged, beveled, and nearly regular. The abscess was about the size of an orange; its boundaries were well defined; its interior lined with a condensed cicatricial tissue. There were no ragged flocculi attached to the parietes or floating in the interior. The peritoneum over the abscess was thickened but not adherent. The prostate was uniformly enlarged; no prominence of the third lobe.

"This case presents several points of interest, apart from its rarity and the uncommon dimensions of the abscess. The reader will observe that the patient made no complaint of pain in the region of the bladder, other than that properly referable to the distention of the organ; that there was no tenderness even on the right side of the hypochondrium; that the abscess was lined with smooth, dense cicatricial tissue; that the opening into the abscess was smooth, firm, and beveled; and that there were no evidences of acute or recent peritonitis on the surface of the parts containing the abscess. These facts all go to show incontestibly the chronicity of the abscess."

PRACTICAL MEDICINE.

Rupture of the Tendinous Cords of the Heart. By CHARLES A. LEE, M.D. (Amer. Med. Gazette, Sept. 1860.)

Dr. Lee remarks, that this pathological condition probably occurs more frequently than is supposed. It was first noticed by Corvisart, who described three cases; afterwards by Laennec and Bertin; each met with one case. It is quite remarkable that while numerous cases of rupture of the heart have been recorded, there are but five or six cases of rupture of the tendinous cords to be found in treatises devoted to diseases of this organ. It cannot be supposed that they have not occured; the true explanation probably is that they have not been observed. Dr. Lee details the history of the following case:

"Mr. L., a lawyer by profession, aged 65, or thereabouts, tall, well formed, and athletic. His father and two aunts had died of heart disease, and cancer had been a common complaint in the family—was thought to have inherited a scrofulous constitution. For several years had symptoms of some affection of the heart, which was, however, believed to be sympathetic. In April, 1859, while driving a stake into the ground with a heavy piece of wood, he *felt somethiny give way suddenly in the region of the heart*, and immediately fell to the earth, gasping for breath, and laboring under excessive pain and dyspnœa. The pulse became very frequent, and nearly imperceptible, while the skin was covered with a cold, clammy perspiration. In the course of an hour he was removed to his own house, not far distant, and restoratives applied, with the effect of affording partial relief. From this time he constantly labored under more or less dyspnœa, especially on the slighest exertion, as walking up stairs, etc.; cough, and bloody expectoration; a frequent, intermittent, and hobbling pulse; pain at times very severe in the cardiac region, and an anxious expression of countenance; deadly pallor and puffiness of the face, purple hue of the surface, and other indications of venous retardation, etc. The patient was able to ride out in his carriage, visited New York, and consulted his old family physician, who regarded his disease as tuberculosis of the lungs. I was called to see him for the first time on the 22d Nov., 1859. He had just returned from his usual morning ride. His appearance was strongly characteristic of obstructed circulation through the lungs and heart. His face bloated, and mostly pale, was marked by a few crimson or purple patches; respiration labored; considerable cough, with bloody expectorations, like quince jelly; breathless on very slight exertion; subject to frequent paroxysms of dyspnœa, especially at night, when he had to get up for relief; an indescribable sensation of oppression in the region of the heart, and throughout the chest; body and limbs considerably emaciated; some œdema of the extremities; bowels easily acted on, often too loose; digestion generally well performed, and appetite tolerably good; urine high colored, and scanty; skin dry; considerable thirst; pulse very feeble, 120, and at times intermittent.

"Physical exploration revealed but little truly diagnostic. The cardiac contractious were too feeble to produce any abnormal sounds. The second sound of the heart could not be discriminated from the first; the impulse scarcely perceptible; dullness on percussion over a somewhat larger precordial space than normal; the point where the apex struck could not be accurately ascertained. The respiratory murmur could be heard over the greater part of the chest, although there was a dull sound on percussion under the left clavicle, and the respiration was not as distinct in any part of the left lung as the right. I saw the patient but once afterwards, about two weeks from the time of the first visit, when the symptoms had become somewhat aggravated. The dropsical symptoms gradually increased, as well as the dyspnœa, pulmonary congestion, and impeded circulation; the mental faculties remained, for the most part, unimpaired till near the close; but the patient succumbed to the disease January 24th, 1860.

"*Autopsy twenty-four hours after death.*—Body emaciated; extremities œdematous; neck, face, and chest suffused with purple patches.

"*Lungs.*—Strong adhesions of the costal pleura on each side, indicating former attacks of pleurisy; bronchial glands greatly enlarged and morbid, occupied by cretaceous masses. In the centre of the principal lobe of the left lung was an apopletic effusion, large as a turkey's egg, and apparently not very recent. Both lungs were greatly engorged with blood. But little serum was found in the pleural cavities.

"*Heart.*—This organ was considerably enlarged; aorta healthy; semilunar valves, both aortic and pulmonic, sound and healthy; an ounce or more of loose fibrinous clots were found floating in the cavities of the heart, and extending some distance up the large vessels, especially the aorta. These concretions, which were white, colorless, elastic, and glutinous, were not only found loose in its cavities, but were also adherent to the walls of the heart, twisted round its valvular tendons and fleshy columns, about equally abundant in both cavities; their most adherent part, perhaps, being about the free border of the valves. The endocardial membrane was much thickened from chronic inflammation, while organized lymph was also deposited beneath it. Several of the *chordæ tendineæ* of the mitral valve had evidently been ruptured, as only their shriveled remains were visible, while others, both of the tricuspid and mitral, were so contracted and adherent to each other as to contract the circumference of the valves to such an extent as almost to close their orifice, and of course, to prevent entirely their healthy play. No signs of ossification were observed, nor any steatomatous patches.

"*Remarks.*—I should have mentioned in the history of the above case, that a few days after the first seizure, the physical and rational signs of endocarditis were present. The patient had also had, considerable later in his disease, several slight paralytic attacks, so called, especially of the arms, owing no doubt, to fibrinous clots floating in the circulation, and plugging up some of the larger arteries. There were also, at times, great throbbing of the carotids, and pulsation in the jugular veins, severe headache, and occasional delirium."

Balsam Copaiba.

The disagreeable odor and taste of Balsam Copaiba may be almost entirely concealed by the addition of a small quantity of the essence or oil of Gaultheria to mixtures containing that liquid.

MISCELLANEOUS.

WE have been gratified far more than we had any right to expect, by the cordial greeting which our contemporaries of the press have extended to us. Our exchange list, considering the short time elapsed since our commencement, is already quite large. We trust the future numbers of the REVIEW will justify the very liberal encomiums passed upon the contents of our first number by our generous colleagues, whose kindness we shall ever remember, and endeavor in all ways in our power to reciprocate.

CLINICAL INSTRUCTION.—We learn from the *Med. and Surg. Rep.*, that the wards of the Philadelphia Hospital are to be opened to students for the purpose of Clinical instruction, free of charge. A pathological Museum is also to be established. These are steps in the right direction.

MOBILE MEDICAL COLLEGE.—The Legislature of Alabama has lately appropriated fifty thousand dollars to the Mobile Medical College, the only institution of the kind, we believe, in the State.

PROF. LAWSON.—From the New Orleans *Medical News & Gazette*, we learn that Prof. Lawson, so long connected with the Ohio Medical College, has been appointed to the Chair of Theory and Practice in the Medical Department of the University of Louisiana. A good appointment, but it is a pity we should lose such a man from our own schools.

STARLING MEDICAL COLLEGE.—By reference to our advertising sheet, it will be seen that the next annual session of Starling Medical College commences on the 18th of the present month. No college in the West is better qualified to prepare the student for the practical duties of our profession, and we take pleasure in cordially commending it to those who propose attending lectures during the coming winter.

GOOD REMEDY FOR TAPE WORM—Dr. Tarneau has had great success in expelling *tenia* by the use of *pumpkin seeds.* Forty gramms of these are pounded in a mortar, with a little sugar, and water is added to make an emulsion, which is taken early in the morning, and is followed in two hours by a dose of castor oil. It is recommended that the patient should be placed on a low diet the day before the remedy is employed.

STEARATE OF IRON.—This remedy has been found very useful by Ricord, in the treatment of the sores with which his name is particularly associated. Some persons may wish to give it a trial in this country, so we extract the formula for its preparation: Take of sulphate of iron, one part; hard soap, two parts. Dissolve them separately in about three times the weight of water, and mix the solution. A greenish precipitate is the result, which is separated and dried, and then melted by a gentle heat. When melted, it is spread on cloth, like an ordinary plaster.

RADICAL CURE OF CONSUMPTION.—Dr. Guirette, of Lyons, has been recently engaged, at the Hôspital de la Charité, Paris, in a series of experiments, testing the value of a new treatment for the radical cure of pulmonary consumption during the suppurative stage. The Paris correspondent of the *Lancet* says it "consists in the establishment of a fistulous opening through the integuments of the thorax and the pleura into the lung at the diseased part, and in the free admission of air into the cavity of the abscess, which at the same time discharges its contents externally." Several cases have been experimented upon with favorable results.

FIVE or six drops of nitric acid in a glass of sugar and water, drank twice a day for a week, is said to cure hoarseness produced by singing.

NEW PUBLICATIONS.—The late publications of the medical press include the republication, from the English edition, of *Dr. Forbes Winslow on the Obscure Diseases of the Brain and Affections of the Mind*, by those enterprising publishers, Blanchard & Lea, Philadelphia. As we have paid our respects to this interesting volume in the present number of the "Review," it is unnecessary to say more than to urge both our physicians and lawyers, to whom these "affections," in many points, are common territory, to add it to their libraries, and incorporate its teachings with their mental treasures. Another work, interesting alike to the professions of law and physic, has appeared from the pen of John J. Elwell, M.D., a member of the Cleveland bar, and formerly a practicing physician: "A Medico-Legal Treatise on Malpractice and Medical Evidence, comprising the Elements of Medical Jurisprudence." We hope to pay our respects to this work more fully in our next number.

Messrs. Blanchard & Lea have issued new editions of those sterling works, Dr. Churchill's Midwifery and Dr. Druitt's Surgery. Their acknowledged merits have placed them far beyond any criticism at this late day. We need only add that the present editions contain valuable additions to former material, and are brought up fully to the date of publication.

A lasting monument of American surgical learning and skill has been reared by Professor Frank H. Hamilton, in his Treatise *on Fractures and Dislocations*, which will serve, for many generations, as a landmark to all explorers in those important territories of the surgical domain. All we can say here, is, buy the book and read it. We have noticed its teachings more at large in a previous article.

Hartshorne's Medical Principles, is the title of a small volume—a kind of memorando-medica, or note-book of medical terms, etc., which will no doubt prove useful to students as a book of reference. We have also received from W. A. Townsend & Co., Elmer's Hand Book of Practice, a valuable aid to the physician in the daily routine of professional duties.

AMERICAN MEDICAL BIOGRAPHY.—Lindsay & Blakiston will publish during the present month a volume of memoirs of eminent American physicians and surgeons, under the editorial management of Professor Gross.

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THE

COLUMBUS REVIEW.

DECEMBER, 1860.

PART I.—REVIEWS.

WEST ON DISEASES OF CHILDREN.

Lectures on the Diseases of Infancy and Childhood. By CHARLES WEST, M.D., author of Lectures on Diseases of Women, Fellow of the Royal College of Physicians, etc., etc. Third American from the fourth London edition. Philadelphia: Blanchard & Lea, 1860. (pp. 630.)

IN this edition of Dr. West's work we recognize an old friend in a new dress. We read the book soon after its first appearance, were charmed with its style, and in the main pleased with its teachings. We have now read it in its enlarged form, and like it better than before.

The author does not present his work to the profession as a complete treatise on the diseases of children, but discusses the subjects with which he is most familiar, and as his experience embraces a period of over twenty years, and embodies the results of observations in 900 cases, among nearly 30,000 sick children, including 288 post-mortem examinations, we may fairly conclude that his attention has been directed to those diseases commonly requiring the services of the profession.

The book is divided into forty-five chapters or lectures, in which the following affections are discussed:

Diseases of the Brain and Nervous System, including diseases of the Spinal Cord and Idiocy; diseases of the Respiratory Organs; diseases of the Heart; diseases of the organs of Digestion and Assimilation, Infantile Atrophy, Thrush, Dentition, Stomatitis, Cynanche Tonsilloris, Hypertrophy of the Tonsils, Retro-pharyngeal Abscess, Cynanche Parotidea; diseases of the Stomach, Jaundice, Constipation, Imperforate Anus and Intussusception, Diarrhœa, Peritonitis in its several forms, Tabes Mesenterica, Intestinal Worms, Diseases of the Urinary Organs, Abdominal Tumors, Infantile Syphilis, Discharges from the Vulva in Children, Fevers, Small-Pox, Chicken-Pox, Measles and Scarlatina, Sudden Death in Infancy and Childhood, and Cerebral Symptoms independent of Cerebral Disease.

A large preponderance is given to the consideration of diseases of the brain and nervous system, and of the respiratory organs, which is very well, inasmuch as diseases of these two systems are among the most common as well as being frequently the most difficult to manage of all the diseases of children.

A proper space is also devoted to the consideration of the diseases of the Digestive apparatus, etc. The introductory chapter contains some valuable hints with regard to the method of approaching and examining sick children, which should be carefully read and remembered by all young physicians, and by that class among the veterans of the profession who are in the habit of declaring it impossible to acquire any thing like a correct knowledge of the ailments of this class of patients from the difficulty of interrogating and examining them. By observing the simple rules laid down by Dr. West, any man not naturally ill-natured, or incompetent, will find that children are really more easily questioned than adults. In the following we are reminded forcibly of the influence which the period of childhood exerts, both upon the development of diseases and the means of counteracting them:

> "The body, however, is not only more frail in infancy than it becomes in after life, but the sympathies between its different parts are more extensive and more delicate. One organ seldom suffers alone, but the affects of even local diseases extend to the whole system, and so disorder its workings that it is often no easy matter to determine the original seat of mischief. Nor is this all; but many important consequences result from the period of childhood being one of unceasing development. In the adult the structure of the body is complete, and its functions are the same to-day as they were yesterday, but the child learns successively to breathe, to feel, to think, and its body is daily undergoing modifications to fit it for new duties, as well as daily growing in size and strength. Disease, therefore, not merely disturbs the present, but its influence reaches to the future; it not only interrupts the present function of the organ that is affected, but it puts a stop for a time to the completion of the general machinery of the body, or disarranges the due proportion of one part of the machinery to another.
>
> "Moreover, there are periods, namely, those of the first and second dentition, when very great changes take place in the organism of the child, and when all these dangers are especially to be feared. Disease is then frequent and serious beyond what it is at other times, and every ailment then warrants a double measure of anxiety; while, on the other hand, if these epochs are safely passed, there succeeds a season of comparative immunity from many affections which were before both common and perilous. But, if this be so, you will at once perceive that something more is essential to the successful treatment of children's diseases than to watch their advances carefully, and to adopt the strength and doses of your remedies to the tender years of your patients. It is not now hyperbole to say that you have to study a new semeiology to learn a new pathology and new therapeutics. Matters of such importance cannot be properly examined at the end of a course of lectures on Midwifery."

Dr. West offers the above as an apology for introducing his book to the attention of the student, a very good one if any apology were needed, which is not the case, but we suppose he felt that he must comply with the fashion so long established among authors.

In the second Lecture there are some things concerning the effects of remedies on children which every student should learn before going into practice, and strictly bear in mind afterwards.

The importance of carefully regulating doses, and the comparative value of Posological tables, is first commented upon, and we are warned that rules by which we would administer a purgative will not answer for the administration of opiates—a fact sufficiently familiar to older practitioners, but not enough so to the young. We have been struck with the discrepancies on this point when examining the tables made by the several authors on Materia Medica, as guides for the administration of medicines at different ages. None of these are sufficiently accurate.

Dr. Young's rule, which is most commonly followed in this country, is the best, but by it we can only arrive at "approximations," for children will by no means always bear with safety the doses of opiates and other powerful medicines, prescribed by that rule.

We should however bear in mind that it is impossible to establish exact rules for this purpose, owing to variability in the qualities of medicines, peculiarities of constitution, the modifying influences of disease, etc.

Neither can we take the rules for depletion in the adult as guides for depletion in the child.

The author very properly says "that depletion by venesection in the arm is hardly ever possible before the age of three years, often not till later, owing to the small size of the veins, and the quantity of fat in which they are imbedded. The jugular vein may be opened in extreme cases, such as convulsions, followed by coma or very acute inflammatory croup." We should say that in such cases depletion by this mode is rarely necessary, and that the benefits to be expected from it hardly more than balance the risks necessarily attendant.

The author tells us that by proper management we can accomplish most of the objects of bleeding by the use of leeches, upon which we should mostly depend in treating children.

The difficulty of estimating the quantity of blood drawn and of controlling its flow after the leech has fallen, is noticed, and the practice of applying one or two leeches, and encouraging bleeding afterwards by the application of a poultice, very properly discouraged. We are recommended instead to apply a larger number, that a decided impression may be at once produced, and to check the bleeding immediately. By such a course a sufficient quantity of blood is drawn in a few minutes, and we avoid in a great measure all the risks attendant on this mode of depletion. It must never be forgotten that the physician should be present during the application, which ought to be in the daytime, if possible, and should not leave until he is satisfied that the hemorrhage is completely checked.

After all it is well to remember that general depletion should not be resorted to in young children, unless the necessity for it is urgent and clear. If any doubt as to its propriety is entertained, it should be avoided. Depletion, when unnecessary, entails manifold evils upon the victim, and even should it by mistake not be practiced when needed, there are many other means to arrive at the same results.

The practice of prescribing mercurials as purgatives in the diseases of children, without heed to indications, is condemned, and the use of that "handy" medicine, calomel, is restricted, as it should be, to inflammations, and to cases in which special action on the liver is needed. We are inclined to add that the restriction might have been more liberal without detriment to the babies. No one should prescribe the gray powder, or mercury with chalk, unless previously satisfied of its purity. We frequently hear of unpleasant effects, such as vomiting and purging, following its administration, even in small doses, showing that it is adulterated, or that chemical changes occur in it after it is made, by which corrosive sublimate or some other irritant is generated. None of the various explanations which have been offered as to the nature of these changes, can be received as conclusive, but it is to be hoped a satisfactory solution will be given before this valuable preparation falls into unmerited obloquy.

We would recommend a more sparing use of antimony than is thought proper by Dr. West, more especially in treating very young or delicate children; and although we acknowledge to the fullest extent the value of opiates in the diseases of childhood, we never forget the disproportionate susceptibility in this class of patients to their influence. No anodyne is so valuable, and none requires so much watchfulness.

The sources of danger from the use of opium and the precautions to be observed, are pointed out in the following: "The danger which attends the use of opium, arises partly from the employment of uncertain preparations, such as the syrup of poppies (to which a great deal of the laudanum sold by irregular vendors, Bateman's Drops, Godfrey's Cordial, and the various elixirs and soothing syrups, etc., may be added), partly from the administration of overdoses, or from their too frequent repetition, of which two errors the latter is more frequently committed. In prescribing for children, preparations of definite strength should always he used, as the compound tincture of camphor, tincture of opium, or Dover's powder. The weaker preparation, the compound tincture of camphor, is often preferable to laudanum, since a slight error in dispensing is of so much less moment. Sometimes the comparative tastelessness of laudanum renders it the more suitable, but if so, even though only a single dose is needed, it is wiser, in the case of infants, to order a mixture containing two or three doses in order to lessen the risks of error. But mischief is more frequently done by the frequent repetition of opium than by the prescription of overdoses; and I am always averse to the common practice of giving small quantities of opium at short intervals for the purpose of checking diarrhœa, or of soothing restlessness in young infants, and prefer, unless there be some strong reason to the contrary, to give a larger dose of the remedy once or twice in the twenty-four hours.

In addition to these general precautions, with reference to the mode of administering opium, special care is needed in its employment in some conditions. It must be given charily in all cases where the system has been exhausted by the previous disease, or by the previous treatment, and this caution must be particularly borne in mind during convalescence from fevers, where yet the patient's restlessness not seldom requires its employment. In all cases of cerebral excitement the use of opium calls for great watchfulness; sometimes it must be given rather as an experiment, whereby the real nature of the disease is tested, and when so employed its results must be scrutinized with the most anxious care. In severe diarrhœa, too, the transition from a state of excitability of the nervous system to a condition of coma is often very rapid in its occurrence; an overdose of opium may hasten or induce this catastrophe, or, even though it should not have this result, yet without great care we shall be at a loss to determine how far the disease, and how far the medicine, has induced the symptoms."

Dr. West also fully appreciates the mischiefs to be apprehended from the careless application of blisters, and warns against them. He recommends the cantharidal collodion in preference to the ordinary plaster; and he ends the chapter with some sensible remarks on the art of prescribing in the diseases of children. If every physician would read these carefully and remember them, there would be less complaint that children will not take medicine, on the one part, and of the doctor's prescriptions on the other: "But first of all, I must remind you of the twofold difficulty which you encounter in the treatment of diseases of children, owing partly to the waywardness of the little patients themselves, partly to the prejudices of their parents, while your success as practitioners will de-

depend upon the tact with which you avoid coming into direct collision with either.

"To prescribe nauseous medicine, when with a little care you could order it in a palatable form; to insist on a particular remedy being employed, which the parents' fancy will not suit, unless you believe the one or the other to be indispensable to your patient's cure, is needlessly to weaken that authority which in the graver maladies it is absolutely essential that you should be able to exert. As has been truly said by M. M. Rilliet and Barthez, it is in the slighter much more than in the serious diseases of children that waywardness, fretfulness, and obstinate refusal of medicine are met with. In the majority of such cases nature alone suffices for the patient's cure, and while you watch carefully the approach of any serious symptoms, you will lose nothing in the confidence of the parents, and gain much in the love of your patients by sparing them the nauseous draught, and the agony of tears, and fright and temper which they often undergo before they swallow it. The battle with a child to compel it to take medicine, to force it into a bath, or to give it an emetic, generally does far more harm than the remedy so administered can do good; and the many tears saved by it in the nursery, are one of the strongest practical recommendations of homœopathy to the public."

It is this one thing which preserves the existence of homœopathy, and which will support it so long as the profession neglects what is urged above. Five people out of every ten know nothing of the principles of medicine, and are guided in their choice of a physician, not by the real merits of the man, but by some thing in manner, or the mode of prescribing, which is agreeable to the women or children of the family, and it is no wonder that sugar pills, which are not troublesome, should often be chosen in preference to rhubarb and castor-oil.

Too little attention is given to this department of medicine, and we are culpable for our neglect. We have no right to force our patients to swallow abominable things, when with a little care it may be avoided without, in the majority of instances, injuring or interfering in any way with the good effects of remedies.

Diseases of the nervous system are carefully considered. Were it not for their importance we should be inclined to think them the author's hobby; he allots them a large space in his book (14 chapters), but does them no more than justice.

The difficulty of making a strictly accurate diagnosis in the outset of many of these affections, and the value of various symptoms are appreciated, and the mischiefs liable to result from error or carelessness properly noticed.

For active congestion and accute inflammation of the brain the author insists upon the necessity of prompt and decided treatment.

He recommends depletion by venesection and also by the use of leeches, but directs it to be used more freely than is customary in the United States, particularly in the West, where it seems to be the general impression that blood-letting is not well borne, more especially by children; and we feel safe in asserting that our physicians succeed as well as those of other countries where leeches and the lancet are more freely used.

This leads us to doubt the necessity for the use of this means in a majority of cases of the kind under consideration, to say nothing of diseases less dangerous. The author carefully reminds his readers of the dangers of excessive depletion.

We should think, as has been suggested, that with proper precaution, veratrum viride might be used with advantage in these cases. It does not, it is true, diminish the quantity of the blood or appreciably change its condition, but lessens in a marked degree the force and rapidity with which it is sent to the various parts of the body, and in our opinion is not more powerful as an arterial sedative than antimony, while it is certainly less irritant. Further, its influence as a nervous sedative is important.

It seems to us particularly well suited to inflammatory affections of the brain occurring in scrofulous subjects, in which depletion, as we are informed by Dr. West, is usually inadmissible.

In mentioning the formidable character of Inflammation of the brain, the author calls attention to the fact that those cases which occur from morbid changes in the brain or its membranes, are less dangerous than those originating from disease without the skull, as chronic otitis, caries of the temporal bone, and of the cervical vertebræ. The danger of the extension of disease from these various parts to the brain is, we fear, too often overlooked by the profession, and it seems almost impossible to make parents comprehend it.

The cause of that fatal disease, trismus nascentium, happily rare among us, is believed by Dr. West, who states that he has only seen four cases, not to be inflammation of the umbilical vessels, congestion of the liver, blows upon the head nor other injury, but probably the combined influence of vitiated air, and the effects of sudden alternations of temperature upon the functions of the skin, and he cites the frequency of the disease in our southern States where the climate is proverbially changeable, and the frequency with which it formerly prevailed in the Dublin Lying-in Hospital, as examples.

We agree with him in this opinion so far as regards sudden atmospheric changes, but our experience among people who are not cleanly will not allow us to accept the remainder. If vitiated air and want of cleanliness could be considered active causes of the disease, we are afraid it would be quite prevalent in some of the northern States among whites, as well as south among the blacks.

In treating of Paralysis, after enumerating symptoms, causes, etc., the author, to assist us in distinguishing between such cases as originate from serious disease of the brain, and those arising from congenital defect in some part of the nervous system, the influence of cold, dentition, etc., gives the following:

> "In many cases the history of the patient will of itself be sufficient to guard us from errors; for if paralysis occur suddenly, affecting both limbs on one side, and be neither preceded nor attended by any cerebral symptom, it is almost certain that it does not depend upon serious organic disease of the brain. Our decision will be more difficult if the loss of powers have been gradual, and especially if only one limb be affected; but if the brain be diseased, we shall rarely find a mere weakening of motor power; for connected with it there will usually be occasional involuntary tremor or nervous twitchings of the limb, or contraction of the toes or fingers. When the paralysis succeeds the convulsions the case will be still more obscure. In most cases of simple paralysis, however, the palsy comes on after a single fit; while, if it depend on some local mischief in the brain, it is generally preceded by several convulsive seizures, during each of which the limb that afterwards becomes palsied is in a state of peculiar movement, or is sometimes the only part where convulsive movements occur." (pp. 192, 193.)

We could wish he had gone a little further and given us more insight into this difficult subject.

The author is not very hopeful as to recovery from paralysis, whatever its source, yet he insists upon efforts to promote it, more especially when it does not originate from any serious lesion of the brain; and some statistics which he offers go to prove that treatment is not always fruitless, or at least that recoveries do occur, and even though the prospect is gloomy we should persevere in our endeavors for a cure, that the evils arising from its persistence, such as distressing deformity, may be averted, more especially as these evils are so much greater than those resulting from palsy later in life.

The cause of *night-terrors*, we are informed at page 202, is usually disorder of the digestive organs, and not, as might readily be supposed, mischief originating in the brain. We are cautioned however to watch patients in whom they frequently occur, lest the long-continued reflected irritation issue in some serious disease of the nerve centres.

The following distinction between the characteristics of insanity, as occurring in the child and the adult, is worthy of remembrance: "A child's experience is small, his ideas are few, and those are gathered from the world around him, not from his own reflections, while one impression succeeds another, faster than his feeble memory can hold fast. Hence in disorders of the mind in early life, we do not meet with the distinct hallucinations, the fixed ideas which characterize insanity in the adult. But though the intellectual powers are imperfectly developed, the feelings and the impulses are stronger, or at least less under control than they become with advancing years; and one great object of education, is to bring them into proper subordination. Mental disorders then show themselves in the exaggeration of those feelings, the uncontrollable character of those impulses; in the inability or the indisposition to listen to that advice or to be swayed by those motives which govern other children. The affection, in short, is of that kind to which the name of moral insanity is usually given."

We think with the author that physicians are not sufficiently well acquainted with cases of this kind, and it is because, until the insanity becomes well marked or idiocy fixed, their attention is not often called to them. Parents usually regard the outbreaks of temper and other freaks as evidences only of precocious wickedness to be overcome by injudicious punishment, or equally injudicious indulgence.

A clear distinction is drawn, at page 215, between idiocy and "mere backwardness of the intellectual powers," the words of Seguin being used: "The idiot, even in the slightest degree of the affection, presents an arrest of development, both of body and mind. The backward child does not remain stationary, but his development goes on more slowly than that of other children at his age; he is behind them in the whole course of their progress, and his delay, increasing every day, places at length an enormous distance between him and them—a distance which in fact is insurmountable." This distinction is however apt to be forgotten by those who have care of such children, and at the age of puberty they are in but little better condition than that of idiots, when with proper care they might have been useful members of society.

A distinction between congenital idiocy and that which is caused by disease within the first year or two of age is also made, and the author, in common with others, regards the condition of the latter class of cases to be most hopeful. Some statistics by Dr. Howe are quoted to show the relative frequency of the two classes of cases.

Dr. West thinks that the statistics, as gathered by Dr. Howe, cannot be regarded as altogether reliable: "In 420 out of 574 cases the condition of idiocy was congenital; but these numbers, if received as absolutely correct, would, I am sure, lead to a very considerable overestimate of the frequency of congenital idiocy."

The modern ideas of the pathology and therapeutics of the diseases of the respiratory and digestive organs are fully adopted. Indeed we may say that both, so far as diseases of these two sets of organs in children are concerned, have received large additions at our author's hands.

At page 407 are some sensible observations on the diet of young children. We are reminded that the stomach is in condition only to digest milk, and that when we are obliged to substitute the milk of animals for that of the woman, we should bring it as nearly as possible to the condition of the latter. The practice of feeding infants on starchy food receives just condemnation.

That portion of the book devoted to the consideration of Eruptive Fevers is comparatively small, but there is enough of it. Measles, small-pox, scarlet fever, etc., are succinctly described, and correct views of the treatment of these affections and their various complications and sequelæ entertained. Attention is called to the remarkable fact that since the discovery and use of vaccination and the consequent diminution of small-pox, mortality from measles and scarlatina has materially increased, though not to an equal extent.

The so-called prophylactic influence of belladonna is mentioned and rated as it deserves.

Dr. West does not mention the use of the chlorate of potash in this disease, though he speaks of it in diptheria, which seems in some respects a close congener. We think unquestionable good is to be derived from its influence, local and general, though we are unable to say any thing as to the nature of the changes produced by it, either in the blood or in the ulcerated throat. We use it in almost every case, but of course not to the exclusion of other medicines and influences.

The last two chapters, on Sudden Death in Infancy and Childhood, and Cerebral Symptoms, Independent of Cerebral Disease, are full of valuable and curious information. We are told that infants often die suddenly, and that "we scrutinize the frame a few moments, since so full of life, now still forever, and yet fail to discover why it has ceased to move; the cause which stopped it had done no irremediable damage, had left perhaps scarcely a trace of its effects, it was but momentary in its action, and could we set the machinery in motion, there seems no cause why it should not again perform its functions as harmoniously as before." Such deaths, Dr. West thinks, rarely occur from any change in the brain or other nervous centre, but almost always from some interference with the function of the lungs by one or another cause; and he mentions laryngismus stridulus as one of the disorders from which danger is to be apprehended.

Sudden movements, when there is great debility from any cause, and more particularly when arising from or accompanying hooping-cough or pneumonia, are mentioned as being sometimes the cause of sudden death, which without them might be avoided. Death resulting in this way, Dr. West calls "needless death."

Atalectasis and collapse of the lung are also mentioned in connection with other causes.

The chapter on Cerebral Symptoms, Independent of Cerebral Disease, must be carefully read in order to be properly appreciated. The sources of error in diagnosis in these cases, are carefully examined, and the true value of the symptoms indicated. We may, some of us, avoid errors in treatment by the careful study of this chapter.

Dr. West's book is the best which has ever been written in the English language on the diseases of infancy and childhood. It has imperfections, one of which is, that there is not enough of it. It ought to have been a complete treatise, for the author's opportunities for the study of these diseases have rarely been equaled. We think too that he gives a rather more gloomy view of certain diseases than is justified by the common experience of the profession, at least in this country, but it must be remembered that his observations were mostly made among the children of the poor of London, and that his conclusions could not very well have been other than what they are. We think too he is a little too much inclined to doubt the efficacy of medicines in many affections, while in others he places too great confidence in them, but on the whole his views are sound, and a knowledge of them, we think, is calculated to do good to the profession.

WARE ON HEMOPTYSIS.

On Hemoptysis as a Symptom. By John Ware, M.D., formerly Hersey Professor of the Theory and Practice of Medicine in Harvard University. Boston, 1860.

In medical as in all literature there are scores of authors who have written well but too much; the gold they give us is too much beaten, and, however well adapted for certain ornamental purposes, does not serve, like compact coin, to buy meat and raiment. Time and change make sad rents into such tissues. Others have added treasures to our stores of medical thoughts—have even investigated, elaborated and classified the various phenomena of disease and health, but have done it in a most execrable manner, and to get at any thing worth having we have to encounter much that is unpleasant. Others bring facts to the general store as cartmen bring paving boulders in a cart and dump them on to the highway in a heap, from which you may pick and choose (if you can get at them) any that suit your purpose, where they lay. Dr. Ware belongs to neither of these classes. What he has done he has done well. He has added to our stores of knowledge upon medical subjects, and presented his materials in so quiet and proper a guise, that they have passed at once and irrevocably into their proper place in the ranks. To use a simple phrase, every hit he has made has *told.* But he has done so little to enrich our literature, that every little work he has given us has only tended to deepen our regret that so cautious an observer, so patient a generalizer, so careful a theorist, and so judicious a practitioner, has not left us a more enlarged work upon medical science.

But however much we may regret this, we recollect with pleasure that his short monographs on Croup, on Delirium Tremens, and his occasional contributions to medical literature, have been incorporated into the large mass of standard authority in medicine. It is therefore a great source of satisfaction to greet another work (though only a pamphlet) from his pen. The modest pamphlet before us contains more real matter than many a bulky volume we could mention. It is an attempt to ascertain the value and significance of Hemoptysis as a symptom, by the application of the numerical method to those cases which came under his own observation in private practice during forty-one years:

> "The whole number is 386. The records of these are many of them extremely imperfect, and in some there was merely noted the month of the attack, the sex, and perhaps the age of the patient. Care, however, has been taken to use each case, when an absolute matter of fact is concerned, only so far as it contains details relative to that fact. Still, as to matters of opinion merely, such as are gradually formed as the results of experience, I shall not hesitate to express them, whether supported by accurrate statistical examination or not, unless distinctly contradicted by such examination. As to the value of opinions thus formed, every individual must be his own judge. I must be permitted, however, to express my own conviction, that there are many points in the history and treatment of disease, and more especially in the history and treatment of symptoms, to which a numerical analysis is not applicable, and yet, with regard to which we may arrive at a close approach to the truth by careful and continued observation.
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> "Some of these cases have been seen only in consultation with other physicians; and some only in office consultation. Of these, the history is of course more or less incomplete. The larger proportion, however, occurred in the course of ordinary practice. In these there has been very frequently an opportunity to learn something of the condition of the patient, both before and after the attack; its termination in phthisis, if this were the disease in which it terminated, as well as the character and duration of the phthisis; and, if it had not this termination, the subsequent history of the patient either to his death by some other disease, or as to his condition at the present time." (p. 5.)

In 355 cases, the month in which the first bleeding took place, was ascertained to be in

January,	34
February,	23
March,	38
April,	35
May,	28

June,	18
July,	26
August,	25
September,	28
October,	35
November,	39
December,	26

Thus there is quite a preponderance of cases in the colder portions of the year. June is the month most free from the occurrence of attacks. Another fact appears from a careful analysis of the above table, viz., that the transitional seasons, spring and fall months, have the largest numbers charged to them.

The age was arrived at in 317 cases. He notes the following conclusions:

> "The whole number of cases increases progressively from 20 to 30 years, and consequently that the number of cases relative to the number of persons living at these ages is greater than before 20. Even after this period, the number of cases is at least as large in proportion to the number of persons living, as at any earlier one.
>
> "Taking the whole of life, then, no very probable deduction can be made as to any greater tendency to hemoptysis in one sex than in the other. So far as the cases under consideration are to be relied upon, it is about equal." (p. 9.)

The classification adopted by Dr. Ware, and the results at which he arrives, will appear from the following extracts:

> "I. Those in which hemoptysis has occurred as the *first indication of disease* in persons previously in their usual health, or at least who have before exhibited no marked pulmonary symptoms.
>
> "II. Those in which it has occured at any period in the *forming stage of phthisis*, i. e., where there was cough, fever and other alarming symptoms, but no evidence of softening, or purulent expectoration.
>
> "III. Those in which it has occurred *at any subsequent period of phthisis* to any such considerable amount as to demand particular attention from its quantity.
>
> "IV. Those in which it has occurred in the *later stages of phthisis*, either as the immediate cause of death, or as accompanying the close of a case in such a manner as to constitute a prominent symptom.

“V. All those in which it has oocurred in connection with *other diseases ;* as pneumonitis. disease of heart, asthma or bronchitis.

“I have not omitted, under the two first divisions. any cases on account of the apparently trivial quantity of the discharge, or of some uncertainty as to its source, for the reason that there are very many instances where the amount of blood is very small, and its origin equivocal, and yet it proves the precursor or indication of tubercular disease.” (p. 6.)

“I—Deaths, with symptoms and course of common phthisis,	Ascertained,	52	
	Probable.,	39	91
II.—Deaths. with phthisis, protracted,	Ascertained,	43	
	Probable,	43	86
III.—Death from phthisis or tubercles, after interval of health,	Ascertained,	3	
	Probable,	3	6
IV.—Cases of what may be called recovery,	Ascertained,	62	
	Probable,	52	114
V.—Deaths, where hemorrhage the prominent symptom,	*a.* Directly from loss of blood,	4	
	b. with h. in course of phthisis,	7	
	c. with h. without phthisis, or not in the progress of it,	3	14
VI.—Deaths occurring from other causes,	Diseases of heart, etc.,	15	15
VII.—Hemoptysis in course of asthma,		3	3
		329	329

“With regard to its arrangement, it should be observed that, although much pains has been taken to make it strictly accurate, yet from the mode in which cases are observed in private practice. and the difficulties which lie in the way of recording them satisfactorily, there must be many deviations from perfect accuracy. The errors from this source will probably, however, in the long series of years embraced, nearly balance each other, so that the results arrived at, will not be very far from the truth.” (p. 13.)

Important deductions may be drawn from these data. In the second class, or *Protracted Phthisis*, are included all those in whom life was extended more than two years from the first evidence of disease. The quantity of blood discharged was greater than in ordinary Phthisis, sometimes very much so. It was not uncommon for hemorrhage to be followed by relief of the symptoms, occasionally encouraging the hopes of the physician for recovery. The general results of our author agree with those announced by Dr. Walsh in his report of the Hospital for Consumption, in 1849, in the statement that those cases of tuberculous disease in which Hemoptysis is an early sign, are on the average more protracted than those wherein it was absent. Regarding those who recovered, he judiciously remarks :

> " The conclusion that the cases of the *fourth* class are cases of recovery, is to be received only with much qualification. The fact of the quiescent state in which a patient, who has had hemoptysis, may remain for many years—as shown by the existence of such cases as those in the third class—and tubercles become afterward developed, renders it extremely probable that in many of these persons, recorded as recovered, the same state of things did actually exist. This cannot be known except by the event. With our present knowledge, therefore, there is a propriety as well as convenience in throwing them together under this denomination.
>
> " Of the 62 cases of this class in which recovery is known to have taken place, or the patient to have died of some other disease, in 53 the precise interval was noted at which they were known to be living, or at which they had died after the occurrence of hemoptysis. Of the remaining 9, although the fact was satisfactorily known, no record remains of the precise period.

" In	1	the	interval	was	between	35	and	40	years.
	3	"	"	"	"	30		35	
	6	"	"	"	"	25		30	
	14	"	"	"	"	20		25	
	7	"	"	"	"	15		20	
	10	"	"	"	"	10		15	
	10	"	"	"	"	5		10	
	2	"	"	"	"	less than 5			
	—								
	53 "								(p. 16.)

In 190 out of 329, tubercles were the known causes of the Hemoptysis. It may have been so in many other cases in which their presence could not be verified. Besides the general relations of heat and cold as influencing the increase or decrease of Hemoptysis, as already seen, other conditions of the atmosphere exercised an important influence upon health, such as its degree of moisture, its electricity, and its pressure. Dr. Ware thinks, with Dr. James Jackson, that there is room for conjecture, that a sudden change, from a high to a low state of the barometer, may be a determining cause of this symptom in persons of some peculiar conditions. This is supported by the known fact, that many persons ascending high mountains spit blood, when the circulation has been excited by muscular exertion. A very high wind is usually preceded and attended by a fall in the barometer, which therefore excites the circulation. Many persons have attributed their attack to riding, walking or running in a high wind. Several illustrations drawn from cases are given by Dr. Ware. Of other causes of spitting blood, Dr. Ware does not think that vicarious hemorrhage from the lungs is of so frequent occurrence as is generally believed. The foreboding in such cases is unfortunately more melancholy. The most important points respecting a prognosis to these symptoms, are given in the following extract:

"1. That there is rarely any immediate danger from an attack of hemoptysis, especially the first, except when there is some general affection of the lungs of a congestive or inflammatory character, attended by much embarrassment of breathing and other grave symptoms, and that the danger in such cases does not depend upon the amount of hemorrhage.

"2. That of all cases of hemoptysis, so far as we draw our judgment from those which have been now examined, less than two-thirds end in phthisis ; consequently that, in all those unaccompanied by distinct indications of the presence of tubercles, there may be held out to the patient a reasonable prospect of recovery, or at least, of a disease that will be gradual in its progress.

"3. That the most favorable cases, as to complete recovery and future immunity, are those preceded or accompanied by catarrhal symptoms.

"4. That no patient who has once had hemoptysis, however slight, can ever afterward be regarded as entirely secure from the development of tubercular disease.

"5. That those cases of phthisis which are ushered in or accompanied by hemmorrhage, especially if it be copious, are more likely than others to be protracted, and more capable of being prolonged and rendered comfortable by suitable treatment.

"6. That hemorrhages occurring in the later stages of phthisis in large quantity and of continued duration, are liable to be either speedily fatal from their quantity, or to prove so after a short period from the embarrassment to the function of the lungs which accompanies them—but that such cases are of rare occurrence." (pp. 24–5.)

Some very judicious remarks are given respecting treatment, but as the remedies do not differ from those employed by judicious practitioners generally, we need not refer to them. In a large number of cases he has "no doubt, the flow of blood may be safely left to that tendency to its own limitation which probably exists in all cases." The following extract may be borne in mind with profit:

"It cannot be too constantly kept in view, and impressed, so far as it can be, upon the sick, that the danger is not from the hemorrhage, but from that of which the hemorrhage may be a sign. It may even be a question whether the sudden arrest of the hemorrhage may not increase the chance of a subsequent development—not a production—of tubercular disease. That this may be sometimes so, is rendered not improbable by the fact, in protracted phthisis, that the symptoms are occasionally singularly mitigated after an attack of bleeding. This result, however, is not uniform, for the opposite may take place. We cannot, then, rely upon it as a principle of universal application." (p. 26.)

DRUITT ON SURGERY.

Principles and Practice of Modern Surgery. By ROBERT DRUITT, Licentiate of the Royal College of Physicians, London. New Edition. Philadelphia: Blanchard and Lea, 1860. (pp. 695.)

THE numerous editions—this being the eighth—of this well-known work attest its popularity. Several additions have been made to its former contents, and some alterations appear in the views entertained by our author upon the subjects formerly treated of. Additional matter has been added upon the subjects of Subcutaneous Injuries; Diseases of the Eye; the Ophthalmoscope; the treatment of Anchylosis by forcible extension; and of Syphilis by fumigation; the recent improvements in Ovariotomy, the new operations for Vesico-Vaginal Fistula, and the radical cure of Hernia. The subject of Excision of Joints is also treated more fully, while the chapters on Gunshot Wounds and on Inflammation have been cast into new form, so as to present the views of modern pathologists in a practical guise, without the old Hunterian formality of phraseology.

Whilst it is unnecessary to review the book, it may be well to notice some of these subjects.

He admits the impossibility of a perfect definition of inflammation, because we are ignorant of so many of its conditions. He regards it as "a diseased process, including hyperæmia, stagnation of blood, and exudation," and as a complete process in which the state of the constitution, "the blood and the peculiar relations of the part affected, require to be carefully analyzed in their relations to each other." In his analysis of local symptoms, the following remarks are worthy of notice, respecting two of the old classical signs, pain and redness:

"Pain may be felt at a distance, along the course of nerves irritated. Thus the testicles ache in irritation of the bladder. Similarly, pain may be felt along the course of lymphatic vessels and glands if they are impregnated by the inflammatory exudation.

"Lastly, pain may be absent in slight cases. Moreover, it must be remembered that pain is a subjective symptom, and exists in the consciousness of the patient; and though the conditions for it exist, it may not be felt if the nerves are severed, or the brain stupefied by disease, alcohol, or narcotics." (p. 53.)

"The *redness* is another consequence of the hyperæmia, and its appearance depends, in some degree, on the natural arrangement of the vessels of the part; thus, inflammation of the conjunctiva differs in appearance from that of the sclerotic. But it is still more influenced by the cause of the inflammation: thus the vivid blush of phlegmon, gradually fading into the natural hue, differs from the abrupt red, dusky patch of erysipelas. Moreover, the color is often modified by blood exuded into the inflamed part, as in boil and erythema nodosum, or by a peculiar condition of surface, as in syphilitic lepra: so that almost every inflammation has its own color." (p. 53.)

His analysis of constitutional symptoms is exeedingly able, and brings the subject up to the latest authorities. We regret that our want of space compels us to pass them over. We must, however, quote his general description of the minute anatomy of an inflamed part:

"An inflamed part has a large quantity of blood intruded into its vessels; and its tissues and their interstices are *infiltrated* with liquids which have exuded from those vessels. If examined after death, it is *softer* than a similar sound part, for the hardest tissues seem to lose some of their cohesion. It is also redder, although mere redness, *post-mortem*, is no proof of inflammation, for it may be produced by congestion or by a staining of tissues with dissolved blood pigment which has oozed out of the vessels in incipient putrefaction.

"The tissues involved in an inflammatory exudation (as in cancer and every other exudation) always show signs of 'fatty degeneration,' their true structural markings are confused, and they are infiltrated with minute globules of oil, and soon are liable to be liquefied and absorbed. In articular cartilage, the cells, as Dr. Redfern has observed, are enlarged, and the intercellular substance split up. Besides this, they are greatly influenced by the changes which take place in the exudation, whether towards development or degeneration. If a fibrinous exudution becomes organized, the proper tissue of the part is starved as vegetables are by weeds. If it soften into pus, they become liquefied with it." (p. 55.)

He humorously remarks, that the search for a theory of inflammation, has been like the search for the philosopher's stone or the Grand Arcanum; when found it was to unlock all difficulties and point the right plan of treatment. One class of philosophers thought inflammation was increased action, they therefore drained the blood-vessels, starved the stomach, and tried to "lower the heart's action;" others saw debility in the disturbed vessels and stimulated; still another saw oxygenation of the blood, which he tried to diminish, and so with various other theories with their opposing remedies. Each of these may be, to a certain extent, false, and each may embody a part of the truth—as Dr. Druitt piously observes: "He only who knows and sees all things, can prove a perfect theory." Our author, not dismayed at this conclusion, offers the following explanation of the process:

> "Idiopathic inflammation is the formation of a temporary organ of elimination whereby the blood separates from itself some noxious matter, which is poured into the inflamed part with the inflammatory exudations. The blood meanwhile undergoes a process of oxygenation, whereby spoiled material is reduced to a state fit for elimination by the liver and kidneys; and if that be quickly accomplished, local mischief ceases.
>
> "Traumatic inflammation is caused by changes which take place in the injured part; the blood (perhaps unhealthy to begin with) becomes changed by decaying blood or exudation at the injured part, which has been incapable of, or prevented from, developing itself; or else through the operation of pain and irritation of the nervous system." (p. 59.)

Passing to the subject of the radical cure of Hernia, we find a description of several operations, all of which have for their object the plugging up and closing of the herniary apertures. The principal operations are those of M. Gerdy, proposed more than twenty years ago; of Prof. Wützer of Bonn, modified by Mr. Spencer Wells; the treatment by metallic stitch; the operation of Mr. Redfern Davies, and of Mr. Wood. The latter two are thus described:

> "To Mr. Redfern Davies, of Birmingham, is due the credit of applying a simple form of operation to the femoral and ventral hernia. For instance, in a case of femoral hernia, after it has been returned, the finger or fingers are made to

carry a plug of invaginated skin and sac as far as possible into the femoral ring. Then a curved tube, containing a needle, is carried on the finger well through the ring; the needle is made to pierce the doubled integuments, and to bring through a silver wire suture; one, two, or more such sutures are passed, according to the size of the rupture; the ends are passed through small pieces of vulcanized India-rubber, and are secured by split shot clamped upon them after they have been drawn tight. In about eight days the wires are removed; in eight days more the patient may get up and wear a light truss, till the invaginated plug is firmly secured. The application of this method to ventral hernia will be evident.

"*Wood's Operation.*—In the last place, we come to the operation devised by Mr. John Wood, of King's College, which the author has seen him execute with the most consummate skill, and the good effects of which he has witnessed in a case in which Wützer's operation had failed. It is performed thus:—An incicision about half an inch in length is made through the skin of the scrotum, over the spermatic cord, an inch and a half below the pubic spine. The skin is then separated, by means of a small tenotomy knife, from the subjacent fascia in a circle around this incision, about two inches in diameter. Next, the finger is introduced into the wound and made to pass into the inguinal canal. The finger then searches for the arched border of the internal oblique muscle, and is carried behind it towards the linea alba. Then a curved needle, with its point protected by a tube, is carried up along the concavity of the finger, and made to perforate the conjoined tendon close to the internal ring, and to perforate the skin; but the skin, before perforation, is to be drawn upwards and inwards, so that the outward puncture will be, when the skin is restored to its natural situation, lower and more external than the point where the conjoined tendon is perforated. A thread is now put through the eye of the needle, and the needle withdrawn, leaving one *end* of the thread projecting. The finger next is made to feel for the external pillar of the ring, and to push the cord downwards out of the way; and the needle is carried along it, and made to pierce Poupart's ligament; meanwhile the skin is moved downwards, so that the needle-point comes out at the first puncture. A *loop* of thread is left there and held, whilst the needle is withdrawn. The finger is next made to feel for the internal pillar, and the needle made to pierce the conjoined tendon, the internal pillar, and triangular ligament, half an inch above the pubes. The point is brought out at the same aperture as before, the end of thread is pulled out, and the needle withdrawn. The two separate ends of thread which have perforated the internal pillar, and the loop which has perforated Poupart's ligament, are pulled tight, and are passed through a hole in a boxwood pad, and tied over the bar. Thus the inguinal canal is first filled with invaginated fascia and sac; and then its sides are brought together by this subcutaneous suture, so that it is contracted and made to adhere to the invaginated tissues. A pad and bandage are applied, and the ligatures allowed to remain three or four days. After-treatment as before.

"In this operation, the skin is not invaginated; consequently it has no tendency to drag down the other invaginated tissues; on the contrary, it tends to keep them in their place. The time required is shorter; and although some degree of varicocele is apt to follow, yet this cure is more speedy, more certain, and less painful on the whole than Wützer's operation." (pp. 484–5.)

The chapter on Anæsthesia is exceedingly interesting. The history of the discovery of ether and chloroform, although brief, is sufficiently full, due credit being given to the early labors of Horace Wells of Hartford, and W. G. T. Morton of Boston. On the whole, however, our author does not speak so favorably of the benefits of general anæsthesia as some other authors.

"Now comes the very serious question, *Has chloroform, on the whole, increased the mortality of operations?* Dr. James Arnott asserts that the mortality of amputation has increased from 21 to 34 per cent. since the introduction of chloroform, and in consequence of the use of it. Mr. Fenwick shows that in the Newcastle Infirmary, the gross mortality is the same before and since; to wit, 24 per cent.: but that, if like be compared with like, the mortality of amputations from disease has been reduced from 19 to 13 per cent.; and from injury, to 31 instead of 32. Mr. Coates of Salisbury, in a pamphlet, the candid and practical tone which renders it of the greatest authority, declares that the mortality of amputations at his hospital in six years under chloroform, has been 9.259 per cent.; in the six previous years 22.58." (p. 597.)

But against this we must always offset the consideration, that many operations are now undertaken with the aid of chloroform, which were not formerly deemed practicable. Anæsthesia by congelation is thus described:

"The operator must be provided with about a quarter of a pound of ice broken quite fine, which may be effected by putting it into a small canvas bag, and using a mallet or flat iron. 'The pounded ice having been placed on a large sheet of paper, any loosely cohering particles may be separated by a paper-folder, and the unreduced larger bits removed. Beside it, on the paper, about half its weight of powdered common salt is placed, and they are then thoroughly and quickly mixed together, either by the folder while on the paper, or by stirring them in a gutta-purcha, or other non-conducting vessel. If the mixture be not quickly made, the extreme cold of part of it may again freeze other parts of it into lumps.' There must be in readiness a small net of thin gauze, into which the mixture is put; and as soon, says Dr. Arnott, as the action of the salt upon the ice appears by the dripping of the brine, it is ready for use. The part to be benumbed should be held horizontally, and the net should be laid over it; but it is as well to raise the net once in every three or four minutes, in order to watch the effects, and render them equal. A sponge should be held so as to catch the briny fluid that escapes. The process requires a little nicety, which one or two trials will give." (pp. 598-99.)

This is applicable to many of the minor operations, such as the removal of subcutaneous tumors and the opening of boils, etc.

We observe that Dr. Druitt expresses a very favorable opinion regarding the operation of Excision of the Knee-Joint, and adduces some statistics in its support. He thinks it will be "a reproach to surgeons if this humane and rational operation shall be discontinued, on the plea of want of success or large mortality resulting." We are sorry to say that we cannot concur in this opinion, and we think that the statistics, even of British authorities, collected by the American editor, are conclusive as to the excessive mortality of this operation over amputation. As the bane and antidote go together in this book, we need say no more upon this subject. With the remainder of our author's opinions upon excisions of bones and joints, we think all surgeons will agree.

On the subject of Amputations nothing very new is introduced, unless we except the descriptions of the modification of the flap operation proposed by Mr. Teale:

"Mr. Teale, of Leeds, declares that the mortality of the amputations of the thigh and leg is nearly one in three; and that the stumps of those who escape, are generally unsatisfactory, and unable to bear pressure. In order to diminish the mortality, and produce a more useful stump, he proposes to amputate by means of a long and a short rectangular flap. (See p. 638, 642.) The long flap is to be formed out of such parts as do not contain the principal blood-vessels and nerves, and is to be long enough to fall easily over the end of the bone. Its length and breadth are equal to half the circumference of the limb; it is therefore a perfect square. The short flap is one-fourth its length. The long flap is folded over the end of the bone, and united by suture. No dressing is used by Mr. Teale; and he orders the stump not to be lifted for many days. He believes the advantages of this plan to be, that tension is avoided by the ample size of the long flap; that this, folding over the end of the bone, soon acquires organic union with it, and seals up its veins; that the limb is not disturbed by lifting and dressing, and the veins consequently are early closed; and that the end of the bone is covered by parts free from large vessels and nerves, and that the cicatrix does not adhere to it." (p. 636.)

"The surgeon is recommended to begin by marking out the flaps with ink. Taking the circumference of the limb at the point where the bone is to be sawn, half of this will be the length and breadth of the flap. One line is to be traced on the inner side, as near as may be to the femoral vessels, without including them in the flap; a similar parallel line on the outer side, and a line of equal length joining their lower extremities. A transverse line may then be drawn to show the place of the short flap, which should be one-fourth the length of the long one. 'The operator begins,' says Mr. Teale, 'by making the two lateral incisions of the long flap through the *integuments only*. The transverse incision of this flap, supposing it to run along the upper edge of the patella, is made by a free sweep of the knife, through the skin and tendinous structures, down to the femur.' But should the lower transverse line fall across the patella, the skin must be dissected off, and the cut be carried down to the femur, above its upper edge. 'This flap is completed by cutting the fleshy structures from below upwards, close to the bone.' The posterior short flap, containing the large vessels and nerves, is made by *one sweep* of the knife down to the bone; the soft parts being afterwards separated from the bone close to the periosteum, as far upwards as the intended place of sawing." (p. 638.)

From what we have said and the extracts given, our readers will be enabled to judge somewhat of the additions made by Dr. Druitt in this new edition of his already popular work. Thus enlarged and improved, it will continue to rank among our best text-books upon elementary surgery, and to the student of medicine as well as to the general practitioner, we can cordially recommend it as being up with the times, and a safe guide in surgical practice.

DURKEE ON GONORRHŒA AND SYPHILIS.

A Treatise on Gonorrhœa and Syphilis. By SILAS DURKEE, M.D., Fellow of the Massachusetts Medical Society; Member of the Boston Society for Medical Improvement, and of the Boston Society of Natural History, etc., etc. With eight Colored Plates. Boston: John P. Jewett and Company. Cleveland, Ohio: Henry P. B. Jewett, 1859.

THE diseases of which the book before us treats, are unfortunately far too prevalent in almost every community, and with the majority of those engaged in the practice of medicine too little attention is paid to the study of their pathology and mode of treatment; some even regarding them as disgusting and beyond the pale of the legitimate duties of the profession. But whatever may be the peculiar feelings of the individual practitioner in regard to this class of cases, he must inevitably come in contact with them, and it were well, both for his sake and that of the patient, if he find himself prepared for the trial, for such in the vast majority of cases it will surely be. Heretofore great difficulty has been encountered in determining, in a satisfactory way, just what were the best received opinions as to their nature and mode of treatment, this difficulty growing out of the diversity of opinion among those who have given their undivided attention to these diseases. New theories and new modes of treatment met the enquirer at every turn, and utter confusion was too often the result.

Dr. Durkee has sought to obviate some of these difficulties by presenting us a plain practical treatise upon Gonorrhœa, Syphilis, and their consequences. In it we find a fair statement of the various theories of these and former times, coupled with decided opinions of his own, and the results of his individual experience. Of his opportunities for acquiring ample knowledge with which to enrich a book upon these subjects, we have proof in the following extract from the preface:

> "In the early part of my professional career I had charge, for several years, of the hospital department of a large Charitable Institution, in which venereal patients, and those affected with blennorrhagic diseases, daily presented themselves; and I have now devoted more than thirty years to the therapeutics of syphilis and kindred disorders, as they may properly enough be termed. From time to time I have tested a great variety of remedies, and have pursued, by way of experiment, almost every line of treatment that has been brought to notice with any claims to favorable regard. But I have no royal plan of accomplishing a speedy or certain removal of the maladies under consideration. They will yield to a judicious interposition of medical and surgical skill; and no man who possesses such skill, will confine himself to a few medicinal substances that may have acquired notoriety as specifics, while they are endowed with no such qualities."

The first portion of the volume is devoted to the consideration of Gonorrhœa, for which name the author uses the synonym, blennorrhagia. He concurs in the opinion of the "enlightened members of the profession" that gonorrhœa is not a venereal disease, and gives as an excuse for treating it in connection with syphilis, that it "is usually contracted under circumstances identical with those that give rise to syphilis, and that a treatise on the latter disease, however judiciously prepared, would be regarded as deficient in design, unless the former complaint received a due share of consideration."

In treating of the causes of this disease, its specific nature is very satisfactorily discussed. He considers it as quite distinct from simple urethral running or blennorrhagia *simplex*. This he regards as simply an increased secretion from the mucous follicles of the urethra, and may be caused by a variety of irritants, such as intercourse with females suffering from leucorrhœa, or whilst the menstrual flux is upon them, and as being devoid of virulence or any contageous element, whilst malignant gonorrhœa *im-*

pura can be propagated only by its own virus, thus agreeing in his conclusion with Sigmund, *that gonorrhœa alone produces gonorrhœa.*

When a case presents itself for treatment, it will be a matter of importance to determine the exact nature of the disease, whether it is simple inflammation of the urethra, non-virulent, or whether it is of a specific character. In doing this the practitioner will be obliged, in a great majority of cases, to rely upon his own judgment, as the testimony of such patients is not usually very reliable. "The average interval between exposure and the occurrence of blennorrhagic secretion is from four to five days. This fact may help to form a tangible basis, on which to construct a differential diagnosis. All deviations from the time here specified are to be considered as exceptional cases, dependent on peculiar circumstances."

In the treatment of gonorrhœa, Dr. Durkee thinks the abortive plan may be beneficial in a limited number of cases, but for ordinary practice too many objections lie in the way of its adoption. Balsam of Copaiba is evidently a favorite, being regarded as almost a specific in urethral blennorrhagia. The following formula is given for its administration:

℞.	Copaibæ,	ʒiij.
	Spiritus Ætheris Nitrici,	ʒss.
	Tincturæ Kino,	ʒss.
	Mixturæ Camphoræ,	ʒij.
	Morphiæ Sulphatis,	gr. v. M.

Dose. One teaspoonful three times a day.

In addition to this a laxative is given at the outset, rest is enjoined, and where the local inflammation is high, fomentations are used. As adjuncts injections are sometimes employed, and we select the following as one of the best:

℞.	Plumbi Acetatis,	
	Zinci Sulphatis, āā,	gr. iij.
	Aquæ Rosarum,	℥vi. M.

Use with a glass syringe three times a day.

We observe that Cubebs are also freely used by Dr. D. in the treatment of many cases of gonorrhœa. The annexed formula is the one he generally employs:

℞.	Pulveris Cubebæ,	℥viii.
	" Cinnamomi,	℥i.
	" Aluminis	℥i.

M. Div. in chart. No. xxxii. Dose.—One powder three times a day.

> "This combination of cubebs and alum will usually diminish the urethral discharge in two or three days; and if the patient will comply with the suggestions already given in regard to absolute rest, he will find that in eight or ten days his blennorrhagia will be nearly at an end. But let him recollect that first of all things, he should make up his mind to observe a perfectly quiet state of body; and even to keep in a recumbent posture if he expects to experience the best effects in the shortest time. I have occasionally heard physicians speak, with self-complacent air, of making rapid cures in the majority of instances that come under their charge. Such success may have happened; but when it has, I am sure that the strictest avoidance of exercise must usually have constituted en element or condition in the treatment. The precise time requisite for a complete and permanent restoration of the parts to a normal state, is as uncertain as the winds; and in specifying the number of days, within which to cure a given case, the young practitioner had better show his wisdom by his prudence." (p. 31.)

All who have had any experience in the treatment of gonorrhœa, know how often that disease, even with the most careful management on the part of the physician, degenerates into a chronic condition, marked by a small discharge, varying from one to five or six drops every day. This sequence of blennorrhagia, called blennorrhœa or gleet, is usually very persistent, and although it does not materially interfere with the physical health of the patient, is often the cause of great mental distress. Its most common seat is in the vicinity of the membranous or prostatic portion of the urethra, and is not uncommonly accompanied by more or less irritation of the neck of the bladder. It is sometimes situated near the forsa navicularis, but pressure along the course of the urethra will generally determine its locality. In the treatment of gleet the greatest variety and contrariety of means have been used. The following general remarks by our author upon this subject are worthy of remembrance:

> "There is no one plan that can claim absolute supremacy over all others in all cases. The remedies appropriate for one constitution, may be prejudicial to another; and what may be suitable for a patient to-day, may be injurious to him to-morrow. Whatever course of treatment the surgeon decides to take, let him bear in mind that he is dealing with a urethritis—a mere modification of the same malady that was treated under the name of gonorrhœa or blennorrhagia. This is true, certainly, of a great majority of cases which we call gleet. In some few instances. the discharge is kept alive by something more than a sub-acute inflammation of the urethra. There may be hypertrophy of the prostate; or inflammation of the vesiculæ seminales, or inflammation or irritation of the neck of the bladder; or stricture in some portion of the urethra. All these contingencies will suggest themselves to the consideration of the scientific practitioner; nor will he leave unemployed any available means of arriving at a correct opinion in regard to these possible conditions before commencing the treatment of a case. An important point to be determined, at this juncture, relates to the existence of stricture. The catheter or bougie will clear up all doubts upon this question. Patients very often apply to a surgeon to be cured of stricture when they have none. They have a gleet—the sequence of a gonorrhœa that has been mismanaged by some knavish quack, who has neither medical skill nor moral principle." (p. 51.)

Of all local remedies, Dr. Durkee thinks blisters stand at the head of the list for the cure of uncomplicated gleet. He uses the cantharidal collodion, applied by means of a camel's hair-pencil along the whole length of the canal, except two or three lines at the orifice. He says he has often cured gleet with a single application of this kind, and has rarely found cases in which more than two applications were necessary.

Weak injections are recommended for the purpose of keeping the urethra free as possible from all gleety secretion. One of the best is nitric acid, diluted as follows:

℞.	Acidi Nitrici, ...	gtt. xx.
	Aquæ Fontanæ, ...	℥viii. M.

A drachm or two of this can be injected at frequent intervals. The French chloride of soda is also favorably mentioned as an injection, in the proportion of one part of the solution to sixteen parts of rain-water. The use of the bougie he thinks, now that the practice by blistering has proven so successful, will be rarely demanded in private practice. We are warned not to rely alone upon the use of internal remedies in the cure of gleet. "In nine cases out of ten the patient is doomed to meet with disappointment, after having run the gauntlet of all kinds and forms of specifics, so-called, addressed to the stomach." Tonics generally are useful, and a substantial diet should be allowed. As general remedies, the subjoined formulæ are among the best that can be employed:

℞.	Copaibæ, ...	ʒi.
	Tincturæ Cantharidis, ...	ʒij.
	" Ferri Sesquichloridi, . . .	ʒi. M.

Dose. Thirty drops three times a day in a gill of sweetened water.

℞.	Tincturæ Cantharidis, ...	ʒi.
	Quiniæ Sulphatis, ...	ʒss.
	Tincturæ Ferri Sesquichloridi, ...	ʒij
	Acidi Sulphurici Diluti, ...	ʒss.
	Aquæ, ...	℥viii. M.

Dose. One ounce a day in an equal quantity of cold water.

That portion of the volume devoted to a consideration of the nature and treatment of syphilis, although not very full, is, in a practical point of view, quite satisfactory. The author is evidently no theorist, seeking rather to determine the best means for a speedy relief in all cases. He advocates the doctrine of the unicity of the syphilitic poison; believes that true indurated chancres, such as were described by Hunter, are of rare occurrence, and that primary sores not endowed with this characteristic sign, have within them the contagious element, and the power, also, to generate secondary accidents. In speaking of what is called the period of incubation, he says:

> "The interval between impure connection and the manifestation of local symptoms varies somewhat according to the condition and anatomical structure of the part in which the virus is deposited. If this spot happen to be denuded of its cuticular or epithelial covering, inoculation will show itself, without doubt, at an earlier moment than it would if there were no such abrasion. It is probable, also, that the specific appearances may be developed more rapidly on the warm, moist surface of the mucous tissue than on the external surface. Indeed, it is very difficult to inoculate through the sound skin. The average time between exposure and the supervention of morbid phenomena is between five and six days. The extreme, as to this interval, vary from twenty-four hours to ninety days." (pp. 180–1.)

In this connection we find some very good suggestions under the head of abortive treatment of chancre, from which we extract the following:

> "If a chancre be destroyed with caustic at an early day, and before induration of its base has taken place, the system may be saved from infection. The ax has been laid at the root of the tree. This is the case, at least, ordinarily. Ricord holds, that to be effectual, this local treatment should be resorted to before the fifth day from exposure to the contagion. But to this it may be replied, that we cannot know in any given case, at what precise moment the poison may be received into the system. The time when this happens must vary in different individuals, and according to the nature of the various tissues, in which the primary affection is developed; and in regard to the rule suggested by Ricord, as a guide for the rapid destruction of the virus, I must say that I am not disposed to advocate a rigid adherence to it. If, as the result of contagion or of a suspicious connection, the virile organ has upon it a papule, pustule, abrasion, or sore, which *may* be the forerunner of constitutional syphilis, the best thing the surgeon can do, locally, is to make a caustic application to the spot, provided this can be done seasonably; that is, within ten days from the appearnce of the abnormal condition. The design of this simple operation is twofold; to destroy the morbid structure, and to create a healthy recuperative action in the part." (pp. 181–2.)

For local applications, the potassa fusa, the acid nitrate of mercury, and the concentrated nitric acid, are the remedies most favorably recommended. Nitrate of silver is condemned as not being caustic enough.

A chapter is devoted mainly to a discussion of the merits of mercury in the treatment of syphilis. Arguments and statistics upon both sides are presented, the author evidently regarding the judicious use of mercury in proper cases as a valuable assistance in the treatment of this disease.

The different plans of treatment are more fully detailed when speaking of the three principal pathological stages into which syphilis is divided, namely,—the primary, the secondary, and the tertiary. These we would be glad to present *in extenso*, but time and space will not now permit. Our object in noticing Dr. Durkee's book has been to call the attention of the profession to it, for it certainly contains more satisfactory information upon the subjects treated of than any volume ever before published in this country.

LEIDY ON HUMAN ANATOMY.

An Elementary Treatise on Human Anatomy. By JOSEPH LEIDY, Professor of Anatomy in the University of Pennsylvania, etc., etc., with 392 Illustrations. Philadelphia: J. B. Lippincott & Co., 1860. (pp. 663.)

WHEN this Elementary Treatise on Human Anatomy was placed upon our table, and we, as in duty bound, prepared to read it, preparatory to a review of its contents, we thought we were in our usual robust health, but looking on the open pages of Dr. Leidy's book every thing there had a yellow tint. We rubbed our eyes, but the tint did not vanish; we felt queerly,

> "Like one who hath a sudden pain,"

and feared we had an attack of jaundice. Incontinently taking our hat we rushed to the office of a worthy practitioner who had devoted great attention to the organ which secretes bile and sugar, to consult him as to the necessity of its removal. He however could detect no symptoms of disease, so we quietly returned and opened the book at another place, but the same illusion stared us in the face; every page had a mellow tint. We could not account for it. We had heard of Annuals, Poems and such books being printed on tinted paper, had even seen a copy of one at a rich patient's house, but whoever heard of Anatomy appearing in so splendid a guise? We remembered the day (alas, long ago) when our feeble purse was made still lighter by the purchase of the homely Dublin Dissector, of which we felt no little proud, as, resting it on one portion of the cadaver, we dissected another portion, guided by its directions. But who would place a "tinted" book, worth five dollars, on a dissecting-room table, even if it claimed to be an elementary anatomy? No! we were driven back to our conclusion that icteric symptoms had got hold upon us. So splendid a vision as a book of Anatomy printed on tinted paper, with handsome binding and such gorgeous plates, burst upon us like the vision of Vathek in the Halls of Eblis. We looked and doubted, looked again—rubbed our eyes—tried various spectacles, and at last slowly came the question, "What infatuated man printed this thing?" What author, what publisher ever risked his time and labor and money in sending out such a production, in the expectation of an edition being purchased by students who, if they resembled their present writer, have lighter purses than hopes, and therefore little to spare upon such typographical gems! But we were recalled to a sense of our ignorance by a friend at our elbow, who reminded us that the students who flock to Philadelphia were rich and could afford to gratify their tastes, at which we greatly marveled. Possibly, however, thought we, the young gentlemen who made a tour from that city last winter, at the expense of other enthusiastic people, to the schools of the sunny South, could afford to take home so sweet a memento of Philadelphian learning and art; but *credat Judæus.* Another friend suggested that it was getting to be the fashion to teach anatomy in the common schools, and this work was intended for the taper fingers of lovely girls and the admiring glances of hobbledehoys, who now-a-days are expected to learn all physiology, excepting perhaps the reciprocative influences of certain functions. But on looking at pages 468, 475, and others, we found this supposition could hardly be correct, for very minute details appeared of the *tabooed* subjects and certain naughty synonymes given by Dr. Leidy, which, in this event, he would doubtless have omitted. So we were fain to fall back upon the idea that it was intended for rich doctors, wherever they may dwell, to place on their centre-tables beside the works of Josephus, Friendship's Offering, and any other ornamental works which their ambition had collected together for the amazement of the village swains. As every doctor will buy this book, the appearance of a second edition will furnish an evidence not only of the taste of the profession, but also, we may add, of its wealth. We trust such an event may soon happen, and in that event would hint, for the benefit of the enterprising publishers, a still further improvement. Let them follow the philosophical example of Thomas Weigman, who published his works on paper expressly made for him, each leaf being of a different color, and whenever a tint did not suit him, he canceled the sheet in which it occurred. It is satisfactory to add that this little typographical experiment cost only fifty thousand pounds, *which was defrayed entirely by the author!*

Seriously, we fear the book is far too good in its mechanical execution. It is an honor to American typography, and its possession will always be an evidence of professional success in those who can afford to buy it. The work will be particularly adapted to those who wish to study anatomy as a part of natural science, as its relations to surgery are almost wholly passed over. Its descriptions are exceedingly clear and divested as far as possible of unnecessary technicalities. The plates are the finest we ever saw, especially those from the drawings of Dr. Leidy himself. They relate usually to general anatomy, and are life-like portraits of microscopic preparations. They are 109 in number. The portions of the book referring to the liver and the kidneys are very well written, and though somewhat brief, embody all the results of microscopic investigation upon those subjects, without referring to the sources from which they are derived. Readers, however, remembering Dr. Leidy's former contributions to the accurate knowledge of these matters, which have given him so enviable a reputation for industry and precision, will regret, with us, that he has not enlarged more upon these topics. The whole book reflects the true status of anatomy at the present day, and will prove a great acquisition to those who study the science as part of that general knowledge a really educated man should possess. For medical students the absence of all surgical anatomy, and of the topographical relations of parts to one another, as well as the high price which the extreme finish of the book entails upon it, will be, we fear, great drawbacks. To a medical man, however, who, amid the cares and hurry of daily practice, often wants to recall a point in anatomy, this book will prove most reliable. He will find every thing he seeks, divested of all extraneous matter, and in the most attractive form. Let him therefore buy the book, cherish it with care, and especially not forget to wash his hands before he touches the tinted pages.

MEMORANDA MEDICA; *or Note-book of Medical Principles. Being a concise syllabus of Etiology, Semeiology, General Pathology, Nosology, and General Therapeutics, with a Glossary. For the use of Students.* By HENRY HARTSHORNE, A.M., M.D., Professor of Theory and Practice of Medicine in medical department of Pennsylvania College. (pp. 190.) Philadelphia: J. B. Lippincott & Co., 1860.

This ample title-page very fairly presents what is found in the little volume that follows, viz., a brief outline of the *causation*, *signs and symptoms*, the *seat and nature*, the *classification*, and the *principles of treatment*, of diseases, a small but comprehensive, and very suggestive treatise on General Pathology. We have seen no compendium in which the accredited opinions presented by the medical literature of the present day are so fully and so fairly "posted up." In fact, by our more "conservative" friends it will be considered as rather "progressive," as accepting without a doubt, some views that are thought by many to be still *sub judice*. But as the old rule of law and logic, that places the *onus probandi* upon the assertor of an opinion, is usually reserved in medical discussions, this load transferred to the shoulders of the objector, our author may safely maintain his present position, until dislodged by the revolutionary invasion of newer opinions, claiming the merit of later date. But for the most of his assertions he may boldly offer the authority of the best writers and severest thinkers of the age. In a few instances, however, we think he rejects the better and accepts the weaker reason. Ex. page 36: He adopts the animalcular hypothesis of the causation of cholera, in the face of (as we think) the unanswerable objections of J. Simon. A few rather glaring mistakes are observable. Ex. page 81: It is asserted that "a lung permanently expanded by empyema, will give an exaggerated vesicular murmur."

But we esteem the labors of the author of such value as to claim for this work enough of *individuality* to redeem it from the charge of a *mere* compilation; and trust it will meet with the favor that will encourage him to carry out the design intimated in the preface, of adding, "parallel to memoranda on the subjects of Nosography, Special Pathology, and Practice of Medicine."

PART II.—ESSAYS AND CORRESPONDENCE.

ON ICE-WATER IN THE TREATMENT OF CROUP.

BY J. A. MCFARLAND, M.D., TIFFIN.

It will scarcely be necessary to offer any apology, unless on account of tardiness, for inviting the attention of the profession to the use of *Ice-water* in the treatment of croup.

Fifteen years ago I prepared an article for one of the medical journals on this subject; but seeing, about that time, in one of the newspapers, something very much like "my thunder," I concluded to remain silent. Believing, however, that very few regular practitioners have made any trials of this remedy, I propose, very briefly, to return to the subject, with the hope of, at least, eliciting some profitable discussion.

It was in January, 1843, more than seventeen years since, that I first employed cold applications, in the management of croup. During the treatment of a most violent attack, after the ordinary means had been tried without any apparent benefit, and when fairly puzzled what next to do for the relief of the little sufferer, it occurred to my mind, on placing my hand over the child's throat, that the leading indication was to subdue the burning heat, the result of local inflammatory action, and that nothing could be better for that purpose than ice-water, applied directly over the inflamed parts. This was immediately done; and in ten or fifteen minutes a most wonderful improvement was evident. Never have I witnessed, in my whole professional experience, a more rapid and delightful change, than in this my first trial of ice-water in croup.

It was but natural that so gratifying a result would lead to further trials. Up to this time, in my own practice, they must have been repeated at least two hundred times. To this may be added, that no time was lost in communicating the history of my first cases to my professional brethren of this city, all of whom, I believe, are in the habit of resorting, very confidently, to the use of cold water in all croupal affections. For my own part, I can truly say, if I were confined to a single article in the treatment of tracheitis, I would prefer cold water to all others. By its judicious employment, commencing before the formation of false membrane, there will be little or no danger of a fatal termination. Even when diphtheritic formations have commenced, there is no surer way of arresting their progress.

It is neither necessary nor proper, however, to confine ourselves exclusively to a single remedy. Whilst, in severe cases, our reliance is mainly on ice-water, recourse is had, as occasion requires, to ipecac. and alum, as emetics; enemata, castor-oil, or calomel to evacute the bowels; the warm bath, anodynes, and solution of nitras argenti.

I must here enter my solemn protest against the frequent repetition of antimonial emetics. They have doubtless been the cause of many a death among young children. Even a single emetic of tartarized antimony, or its long continued use as a nauseant, in delicate infants, with an irritable condition of the alimentary canal, can never be regarded as safe or judicious; and it may be laid down as a good rule to eschew and discourage all such practice. Ipecac. and alum, either singly or combined, will be found equally efficacious, and infinitely safer.

In applying the remedy under consideration, we use folds of muslin or linen, large enough to cover the whole throat and upper part of the sternum. The wet cloth, wrung just enough to prevent dripping, ought to be well covered with several thicknesses of dry flannel, and then both should be secured with a small handkerchief.

When we wish to have the applications very cold, it is best to have two wet cloths, using them alternately, as fast as they become warm. This course should be continued till the disease is thoroughly subdued. When treatment is commenced early, a few hours may suffice; in neglected cases, several days are sometimes required.

In some cases, water fresh from the well or cistern will be sufficiently cold; but as a general rule, the preference should be given to ice-water.

LARYNGOTOMY FOR THE REMOVAL OF A FOREIGN BODY—RECOVERY.

BY S. LOVING, M.D.

About the 4th of October last a little child of Mrs. B—, aged 18 months, was admitted into the Franklin County Infirmary, suffering with symptoms of croup, with the usual cough, and respiration attended with considerable febrile excitement. The ordinary treatment for croup was directed with the effect of moderating the fever, and also to some extent the local trouble. But still a great deal of irritation of the larynx and trachea continued. There was also at this time the symptoms of quite extensive bronchitis affecting both sides. The child lost flesh rapidly, and had frequent paroxysms of spasmodic cough attended with the usual distressing symptoms of partial closure of the glottis. From the history of the case, so far as a history had been learned, the supposition was that a state of congestion of the mucous membrane of the larynx had resulted from the attack of croup, producing a state somewhat similar to that known as laryngismus stridulus. A peculiar rattling in the trachea was attributed to an abundant secretion of mucus. The patient was treated with tonics, opiates and mild counter-irritation, but did not improve. On the 17th day of the month, I was informed, that just before the child's admission, it had been playing with an ear of corn, and that while so engaged, he had been suddenly attacked with the symptoms from which he was suffering at the date of his admission; that until then he had been in good health. The mother sought the advice of one or two persons in the vicinity, who told her that the child had croup. These circumstances led me to infer that I had made a mistake in diagnosis; that instead of croup, the symptoms were due to the presence of a foreign body in the larynx or trachea. Consultation decided that this was the true state of the case. We however could not decide as to the nature of the foreign substance, but supposed that most probably it was a grain of corn. There remained nothing for the child's relief but the extraction of the foreign body by an operation. From the character of the cough and the frequency of the paroxysms, it was supposed that the foreign body was lodged in the larynx and not in the trachea, and that it was probably of small size. Therefore, on the 18th of November, the operation of laryngotomy was performed in the ordinary manner, the crico-thyroid membrane being divided throughout its entire extent, it being determined beforehand to divide the cricoid cartilage and one or two rings of the trachea, if the opening in the membrane should prove not to be sufficiently large. Air escaped as usual when the membrane was divided, but no foreign body could be discovered. We thought it must be lodged in the ventricles of the larynx, or that its size prevented its extrusion, and introduced with proper care a probe into the larynx, but found nothing. We then determined to divide the cartilage, but just before proceeding to do so, during a fit of coughing, a small fragment of a grain of corn was expelled. Not satisfied that so small a body could have occasioned so much mischief, we made further examinations, but did not divide the cartilage.

We however found nothing more, and dressed the wound with sutures and adhesive straps, feeling that, probably after all, the operation had been unnecessary. The child, however, from that time, began to improve, although he suffered considerably from the cough and irritation. In five or six days the opening in the larynx had closed, and the wound in the tissues external to it granulated. At the end of three weeks cicitrization was complete. Nothing remained except a slightly contracted cicatrix. The child's health at this time (Dec. 1) is nearly as good as ever.

The foreign body is the hard portion of the outer covering of a grain of corn, nearly triangular in shape, with acute angles and sharp edges, and is quite sufficient to have produced all the symptoms, but we presume is one of the smallest objects that ever occasioned so much trouble.

PART III.—FOREIGN SELECTIONS.

ANATOMY AND PATHOLOGY OF THE ORGANS OF HEARING, WITH DISSECTIONS.

BY DR. VOLOTOLÏNI OF SILESIA.

[Translated by C. E. BOYLE, M.D., for the Columbus Review.]

If we inquire why aural medicine has occupied so low a rank, compared with other branches of medical science, nay, is regarded as demi-charlatanry, the answer is simply this: A course has been pursued in regard to it, quite different from that which obtains in other branches of the healing art; a kind of empiricism has prevailed, which aims to arrive at a mode of treatment, while almost totally neglecting pathology and physiology. Hence, every thing is enveloped in a kind of mystic darkness. *Nice diagnoses* are made, which cannot be demonstrated by pathologico-anatomical facts, but rather, have their origin in the imagination. What would be said if a person should try to establish new diagnostic signs of pectoral diseases, without having confirmed his assertions by post-mortem dissections? Simply, that the *evidence* of the new signs was wanting. And so it has been hitherto with respect to diseases of the ear. Scarcely one of them, save those of the external meatus auditorius, or, perhaps, of the Eustachian tube, has been demonstrated by pathologico-anatomical examinations. Hence, when armed with the ear speculum and catheter, the aurist has been considered as prepared for practice; and those diseases which are situated beyond the tympanum, have been commonly grouped under the name of "nervous deafness." This, however, was almost equivalent to the expression: "The patient cannot be relieved"—an expression which we hear even from the lips of physicians of character. Something, however, must be possible in these cases, for progress can be made in all branches of knowledge, and why not in this? The deaf are, in many respects, more unfortunate than the blind, at least in youth, at which time mental development should begin. We cannot expect any one person to perfect this branch of medical science; but this is no reason why we should not address ourselves to the work. And careful pathologico-anatomical examinations and investigations are the only secure basis.

Another reason for the neglect of aural medicine is this: Scarcely any progress could be made without the aid of the microscope, as we have to deal almost exclusively with microscopic objects in the organs of hearing. The alterations recognized by the naked eye are generally of minor importance, as the labyrinth and nerves form the most important parts of the auditory apparatus, and require microscopic examination. How, for example, could a partial fatty degeneration of the nervous acusticus be recognized without the microscope?

Another cause of neglect is the existence of intricate technicalities, which discourage dissection—this being no secondary consideration, as might be supposed. The excellent investigations of the organs of hearing, by Dr. Trœltsch, Würtzburg (Virchow's Archives, vol. xvii.), afford us some idea of aural medicine, but they are, nevertheless, very imperfect, as, of twenty-eight examinations of the ear, only four give any account of the labyrinth. This can only be explained upon the supposition that the dissection of the labyrinth is attended by too much difficulty, which supposition is justified by the method of dissection given by Dr. Trœltsch himself (Virchow's Archives, vol. xiii., No. 6, 1858), which I regard as very imperfect.

A still more important reason for the neglect of pathologico-anatomical examinations of the organs of hearing, is, that such investigations have been considered superfluous, if a diagnosis had not been made before death. It is true that the diagnosis of aural diseases would gain but little by such examinations alone, but we can rarely, in private practice, have an opportunity of making a dissection of an ear which has been examined during life. Yet all these difficulties ought not to deter us from using all the means we have at command. If Toynbee had specimens sent him from the most remote parts of Great Britain, we in Germany should not be behind. I would be thankful to receive such specimens, particularly those of which the acoustic power had been determined during life by the use of the watch. Dr. Trœltsch has entered upon the proper course by furnishing the necessary material from hospitals, and I myself, by the kindness of Dr. Cohn, receive specimens from All Saints Hospital, at Breslau.

The absence of an examination by the ear speculum and catheter, during life, must not be overestimated. This deficiency can be compensated, in a great measure, by post-mortem examinations. It is certain that most of the morbid changes, caused by disease, which can be discovered during life, by means of the speculum, auscultation, and percussion, can also be demonstrated upon the cadaver. If only the acoustic power be determined during life, other diagnostic signs can be discovered after death. We may even attempt a diagnosis after death of deep seated alterations by inspection of the meatus externus, and are able by auscultation of the cadaver (by blowing air into the Eustachian tube) to form a very accurate one; nothing more could be done during the life of the patient. The os petrosum alone, after being separated from the skull, is sufficient for this purpose. The catheter must be introduced into the tube, whether upon the living or dead body, and insufflation produces the same sound in either case. My method is as follows: I insert one end of a catheter into the tuba Eustachii, and let an assistant blow through it, while I apply the end of the diagnostic pipe, described by Kramer (Deutscher Klinik, No. 52, 1858) to the external meatus. The sounds which occur in the tympanic cavity can be very nicely auscultated and observed, as I shall hereafter point out. I recommend this method of proceeding emphatically. It will afford valuable contributions to the examinations of the tympanic cavity, and, as stated, we do not need entire cadavera, but can experiment with an excised os petrosum. Whoever has at command an abundant supply of bodies, could, by repeated auscultation, afford valuable contributions to the diagnosis of the conditions of the middle ear. These methods of auscultation have an additional value, as they concern those parts of the ear which are but slightly, if at all changed, for a considerable time after death.

I proceed in the following manner with dissections of the organs of hearing: In private families it is a matter of great importance that the head be disfigured as little as possible. After the calvaria has been removed, both ossa petrosa are taken out by two transverse cuts of the saw, one of which passes anterior to the petrous portion of the temporal bone, through the sella Turcica (and even through the posterior part of the orbital cavity), and the other behind it.

The empty space in the base of the cranium is filled up with cotton, and a couple of iron pins are inserted into the cut surfaces of the frontal and occipital bones, to secure the calvaria in situ. By this means the entire face is properly supported, and not at all disfigured, except that the lower jaw falls, and must be retained in its place by a bandage. The anterior section must not be made too near the external meatus, or the Eustachian tube will be carried away. The section, as before said, may be made through the posterior part of the orbital cavity, without producing disfiguration. The dissection of the meatus externus, the tube, and the middle ear, will be only briefly described, as it is not difficult. I first remove the anterior wall of the meatus, until I bring it and the membrana tympani into view, then I open the tube to its entrance into the tympanum—try the mobility of the manubrii mallei from without—then separate the membrana tympani entirely around its margin, so that I can inspect the tympanic cavity freely, for which purpose the manubrium mallei may also be cut away. We need not remove the roof of the tympanum as yet, for the essential parts would be too easily disturbed by so doing. The labyrinth, which presents the most important, but also the most difficult part of the examination, I dissect as follows: I use only a fine phalangeal saw for removing the parts *around* the organ of hearing, and fine dental chisels, quite small and sharp, with which I open the canals and all parts of the labyrinth, always carrying the chisel horizontally, if possible. In addition, I use several very small eye-forceps, with or without toothed or hooked extremities, a common case of anatomical instruments, with at least one scalpel, which has a short, strong blade for cutting bones, and several sounds. I do not use a vice, because when much tightened it crushes the delicate bones, a board with a raised edge being quite sufficient to afford the necessary support and firmness to the bone.

I will preface one more remark before describing the method of opening the labyrinth. The organ of hearing, even in health, presents a great number of deviations in shape. Sometimes the canal lies higher, sometimes lower than normal, and that one leading to the fenestra rotunda is sometimes seen in profile, sometimes in front, etc., yet a certain fundamental form is every where present. I select the superior semicircular canal, for opening into the labyrinth—the eminentia arcuata pointing out its site. The highest point of this eminence is chiseled away, a little at a time, until the canal is entered (sometimes it lies one line deeper anteriorly). When this canal is opened and examined every where with the lens, another opening is made into the posterior canal, which is then examined. In the right angle formed by these two canals, lies the horizontal canal, usually 4—5 lines lower than the highest point of the superior canal. This must be carefully observed lest the preparation be destroyed when the right angle formed by the superior and posterior canals is chiseled out. Sometimes it is difficult, on account of the form of the parts, particularly the squamous portion of the temporal bone, to expose the horizontal canal, when the entire pyramid should be removed, by the saw, close to the squama; the whole of the tympanum remains in the os petrosum, and the facial nerve is cut only where it descends upon the mastoid process. In such cases the tympanum must first be carefully examined to see whether the Fallopian tube is exposed. The remainder of the facial nerve can be examined in the mastoid process afterwards. Or, the facial nerve may be first examined from the processu acustico interiose, outwards to the point where we wish to bisect the Fallopian canal. When we have thus exposed the horizontal canal, we find ourselves upon a level with the roof of the vestibule. The integumentary linings can now be drawn out of the bony canals, and placed under the microscope. The vestibule must still be left untouched, and the porus acust. int. is first opened by taking off its roof (with the chisel), and thus both nerves are laid bare. Now, the facial nerve is first followed out, because it passes over the anterior margin of the cochlea, and must be removed before the cochlea is examined. The facial nerve is next followed to the mastoid process, and the rest of it can be left for after-examination. When we have thus laid bare the facial nerve, and liberated the nerv. acust. to its entrance into the labyrinth, the remaining portion of the roof of the vestibule (over which the superior canal passes) is chipped away by horizontal cuttings, and the vestibulum is exposed. This is first examined under the hand-glass or lupine, then the ampullæ are taken out and placed under the microscope.

The vestibulum is now exposed, and can be still farther examined under the lupine, particularly the basis of the stapes within it, and the entrance to the cochlea (scala vestibulis). The cochlea itself is now for the first time opened, by placing the chisel above the entrance of the nervus cochlearis, and opening any one of its winding cavities, then proceeding backwards and forwards until we reach the fenestra rotunda from behind, that is, from within, in which the membrana secunda tympani is first examined. In reference to the nervus acusticus, I must yet call attention to this point, that, upon removing the brain from the cavity of the skull, this nerve should not be too much stretched, as by this means it can be easily torn off at the labyrinth; this is easily understood when we reflect that this strong nerve is divided into very fine filaments, like a hair pencil, immediately upon its entrance into the hard labyrinth. Thus, to repeat, in short, my method of dissecting the labyrinth is this: Open the superior semicircular canal, then the posterior, then the horizontal (the latter with or without sawing off the pyramid from the squama of the temporal bone), then open the porus acusticus inter, by removal of the superior wall of the same, expose the nerves, following the facial nerve, through the Fallopian canal, then raise the roof of the vestibulum, and finally open the cochlea. The whole must be done systematically.

Neglect of the pathological anatomy of the ear has been productive of many errors in this branch of medicine, and the absence of anatomical—I will not say, positively, knowledge but—skill appears to have had its influence upon the physiology of the part, as it is not yet known what nerve controls the movement of the tenser tympani muscle.

Valentine says (Physiology, vol. ii., page 385), that the results of vivisection are made uncertain by "deeply disturbing operations." But the tympanum can be opened without disturbing any essential part, by sawing off the mastoid process and breaking away the cells with forceps, when the tympanic cavity is at once opened behind the uninjured membrane, so that the whole tympanum can be seen, and physiological experiments upon the chorda and tensor tympani muscles can be instituted. This can be done in the calf. In the sheep, the mastoid process is still more easily opened, as it has no cells, and only presents a single bony cavity, but the dimensions are smaller than in the calf. In this way we can, without vivisection, lay open and expose, in a few minutes, the cavity of the skull and the tympanum of a recently slaughtered animal, and institute experiments, and, in this manner, we could soon come to decisive results concerning the function of parts in the tympanic cavity. Up to this time, I have only made a few such experiments upon freshly slaughtered heads, but have not yet obtained any results, although, upon touching the portio minor of the 5th pair of nerves, the decapitated head still bit my hand. I could not observe any movement of the membrane with regard to the malleus, by irritating either the portio minor or the nervus facialis; and the question is imminent, whether the contraction of the muscul. tensor. tymp. is not caused by the glossopharyngeal or even by the accessorius Willisii, which mingle branches with the vagus. Upon the last named nerves, I have not yet instituted any examinations. There is no doubt but that the movement of the stapedius muscle is affected by the facialis, for a large branch of this nerve is distributed to it.

The following is the record kept of two cases of dissections of diseased organs of hearing, transmitted to me through the kindness of Dr. Cohn of Breslau, with a history of the diseases. I regret that I had not an opportunity of examining any of the cases during life, and, therefore, cannot give any positive information in regard to the auditory capacity. Yet, notwithstanding, each of these cases will be instructive.

Case I. Organs of hearing of a laborer, æt. 41. Died of phthisis pulmonalis and marasmus. There had been only partial deafness or difficulty of hearing. I copy from the case book only those items which relate to the difficulty of hearing. Patient was kicked upon the head by a horse, in 1843. The cure of the wound lasted 16 weeks, after which he was quite well. At the end of 1858, he became sick with headache and cough; the headache was particularly severe at the back of the head, and extended to the left ear, within which he experienced intense pain, which deprived him of sleep; no fever at first; pupils normal. In the course of the disease vomiting occurred, and still more violent pains in the left ear. The pains intermitted upon the application of leeches, etc. Hearing in the left ear was yet good, but the sound of the voice produced a piercing sensation. Delirium now set in; the eyes remained closed; pupils normal; subsultus tendinum; apathetic; singing in the left ear; rigor lasting three-fourths of an hour; pains in the right ear also; tongue directly protruded. Later, continual delirium and complete incoherence; left pupil appears somewhat smaller than the right; distinct distortion of the mouth to the right and upwards; tongue protruded laterally towards the right; many auditory hallucinations; still later, at times, a cessation of delirium and return of consciousness; hearing very much impaired; twitching of the muscles of the face and extremities; discharge from the ear entirely gone; capacity to hear remains, and death at last supervenes.

Thus, in this case we had violent pains in the left ear, with a discharge from the same, difficult hearing, distortion of the mouth towards the right and upwards, crippling of the left facial nerve, so that the antagonistic muscles drew the face towards the right side. From this it may be inferred that during the progress of the disease the facial nerve suffered in its course through the ear.

Upon dissection the following appearances were presented: Vessels of the pia mater full of blood; serum beneath the thickened arachnoidean; an abundance of serum at the base of the cranium; the sinus at the left side contained a bloody fluid, that of the right a firm pale clot; substance of the brain softened, œdematous, poor in blood, presenting no farther changes; caverns in the lungs; spleen poor in blood; fatty degeneration and enlargement of the liver; tubercles in the bowels, long abscess in the cœcum and ileum.

Left Ear.—Unfortunately this had been opened by some cuts of the saw before I received it for examination, so that I can only give an imperfect report. *Meatus externus* strongly reddened, membrana tympani destroyed, tympanum full of pus, and denuded of its mucous membrane; the pus extends farther into the tube, the lining membranes of which are wholly destroyed, so that the carious bones are exposed, and only a thin lamella remains between it and the canalis caroticus. Incus and malleus still existing; stapes gone. Chorda tympani destroyed. Nervus acusticus within the porus acusticus covered with numerous blood-vessels. Nervus facialis, from the flexure outwards, reddened and surrounded with pus; separated from the tympanum only by a very thin lamella of bone which is covered with pus; here it is particularly reddened. The mastoid cells are filled with turbid serum and partly with pus.

Right Ear.—Meatus externus quite dry, containing some crumbling masses, from which, under the microscope, upon the addition of iodine and sulphuric acid gas is evolved, and then cholesterine-crystals are to be seen. The epidermis is easily removed from the membrana tympani, otherwise normal. Nothing abnormal in the tympanum, except here and there slight exostoses. *Tuba* normal. Nervus acusticus wanting in the labyrinth, which, in other respects, is normal.

At all events the nervus acusticus was torn off upon removing the brain from the cranial cavity, a circumstance which can easily happen, as I have already explained. Otherwise the absence of that nerve would be difficult to explain, as it could hardly be absent during life, as in that case the patient would not only have been hard of hearing, but deaf, particularly as he could not hear much with the left ear.

CASE II. Otitis interna in a laborer, aet. 35, who also suffered from phthisis pulmonalis. Facial nerve unimpaired; difficult hearing, said to have been the result of a wound.

Left Ear.—Meatus externus. After cleansing the same of much pus, the lining membrane was found thickened and inflamed. Membrana tympani entirely destroyed, and there is to be seen upon the upper wall of the meatus a large carious opening. *Tympanum* full of pus; the roof destroyed by caries which involves the tuba also, so that its opening into the tympanum has a diameter of 3—4 lines; its mucous membrane entirely destroyed; the head of the malleus detached and found lying in the pus. The *caries* had proceeded outward from the tuba to the carotid canal, and jugular foramen; the jugular vein being thickened at this point. In the roof of the tympanum the carious opening extends inwards and backwards, one inch in length and one half inch in breadth; the dura mater covered with exudation, alone separating the brain from the tympanum. The incus still in place, but the processus longus was roughened by caries and disconnected from the stapes; the latter still hangs, but quite loosely, in the fenestra ovalis. Os sylvii disappeared. The canal to the fenestra rotunda filled with pus. Chorda tympana in its whole course, through the tympanum, gone. Processus mast. full of pus down to the point of which the walls were so thin that only the exterior wall prevented the exit of the pus. Nervus facialis normal to its flexure; immediately behind this it lies perfectly bare; in the tympanum it becomes reddened and is surrounded by pus.

Labyrinth.—Superior and posterior canals normal, but their openings into the vestibulum closed by the thickened ampullæ, as is also that of the horizontal canal. In the vestibule is a thickened, white mass traversed by blood-vessels, which obscures the view of the base of the stapes, to which it adheres, and prevents it from falling out of the fenestra ovalis. This mass likewise prevents the view into the cochlea (scala vestib.) Removed, it feels partly hard, partly gelatinous, and is difficult to compress. Under the microscope, it appears as thickened areolar tissue, and reveals pus corpuscles and innumerable otolithes (the degenerated ampullæ). In the horizontal canal are found otolithes also, many pus corpuscles and many blood-vessels. In the external wall of this canal is a hole as large as a lentil-seed, where it opens into the vestibulum, no longer closed by any thing but a tender cuticle. The interior integuments of the cochlea present a dirty, dark-gray color, from a considerable quantity of dark pigment, particularly about the modiolus. Under the microscope, mulberry-like glandular masses of dark color are seen here, which have almost the appearance of the otolithes of the ray or wash (cf. Leidig Histol. of man and animals, Frankfort, 1857, p. 271), and common otolithes besides. The lamina spiralis is traversed by thick, red blood-vessels in which pus corpuscles are perceived under the microscope.

In this case the carious malleus lay in the pus collected in the Eustachian tube, through which it might have passed into the throat and been coughed out.

After this patient's ears became so extensively diseased and his life threatened from so many other causes, but little injury, it is true, could have been inflicted by any course of treatment, and yet it would not have been any the less unfortunate for the physician to have hastened the fatal termination, as would have been the case had he employed irritating injections in treating the diseased ears. By their use the stapes would have been forced out and the stream would have penetrated the labyrinth ; it might also have passed through the carious opening in the tympanum and produced irritation of the dura mater.

In this as in the preceding case numerous otolithes were found, which would seem to indicate that the inflammatory process favors the multiplication of these inorganic formations.

BESTALL'S POLARZING APPARATUS is a new contrivance for showing the phenomena of polarization in glass, acids, salts, crystals, etc. It is adapted for night or day. It consists of a polarizing mirror, glass stand for the proper angle, and analyzing tube, all of the most simple and cheap form.

ON TYPHLITIS AND PERITYPHLITIS.

BY DR. MUNCHMEYER. (Deutsche Klinik, 1860.)

Dr. Munchmeyer discusses in several able articles, forming a particularly valuable monograph—dilatation of the cœcum, inflammation of the cœcum and its appendages, cœcal ulceration, inflammation of the neighboring cellular tissue, and its consequences, in rather extensive details as to cause, character, and treatment.

Accumulation of fæculent matter may easily induce abnormal *dilatation* of the cœcum. Cause: inactive mode of life, and use of food difficult of digestion. Its occurrence is favored by pressure upon the transverse colon from stays or belts, and other circumstances interfering with the passage of the fæces. Distinguished from inflammation, etc., by absence of heat, and violent pain in the region of the cœcum, increased on pressure and motion, and frequently by presence of pain in the right leg. Though evacuation may, in the beginning, not be entirely wanting, the fæces are scanty and hard, alternating with diarrhœic discharges.

Typhlitis occurs hardly ever without previous dilatation. The cause of inflammation supervening, not seldom, is cold, especially from cold drinks; or in other cases, puerperal disorder. In both of these cases, it is acute; in others, coming on more gradually. The symptoms are far more violent than those of dilatation, though similar locally. There is continued severe pain, very much increased on pressure or motion of the body. Great heat, and a circumscribed, somewhat movable tumor can be perceived on external examination. Violent fever and gastric disturbance also soon appear. Unless the inflammation is subdued, it extends to other portions of intestine and to the peritoneum, or, by closure of the ileo-cœcal valve, causes ileus. In the most favorable case, the local phenomena disappear with abundant perspiration and defecation. The irritation of obstructed, hardened fæces, continuing, *ulceration* may be added to inflammation. At first, without characteristic symptom, the passage of a little muco-bloody, purulent matter, generally soon points it out. The sound observed on percussing the tumor is also generally peculiar and indicative. Cases terminating favorably are known by the fever abating, critical sweats, and excretion of urine returning at certain hours daily, the gastric difficulties disappearing, and yellowish mucoid, and afterwards pappy discharges from the bowels, besides improvement of the local phenomena. Perforation is attended with the well-known phenomena, as of other portions of the bowels.

Perityphlitis is either a consequence of dilatation and typhlitis, or occurs after general diseases, with a tendency to localization of inflammatory processes, as rheumatic, catarrhal erysipelatious and puerperal fever. In the latter cases, too, previous obstinate constipation forms a predisposing cause. The pain and tumefaction are diffused over a larger space than in typhlitis, frequently extending over the whole right half of the abodomen. The pain is more superficial, and either of a colicky or rheumatic nature. Gradually the pain becomes more limited in extent, but increased in severity, now soon rendering voluntary motion of the leg or toleration of pressure in the right iliac region impossible. A hard, immovable tumor may also then be perceived, etc. Secondary perityphlitis is caused by extension of inflammation from the cœcum, and is known by the uniform diffusion of the tumefaction in all directions. Termination by resolution is possible in even the most acute cases, but suppuration occurs frequently.

In the *treatment* of all these affections, evacuation of the bowel is required, but the manuer of accomplishing this and accompanying treatment must be different according to the circumstances of each case. Where there is great dilatation with irremovable obstruction, the only means is the establishment of an artificial anus. In cases of typhlitis and perityphlitis, castor-oil and calomel may judiciously be employed in addition to enemata; which latter are continued while the painful tumefaction lasts. As soon as perforation is revealed purgatives must, of course, be discontinued. Abstractions of blood, general and more especially local, may prove of decided benefit, particularly in the beginning, and may be resorted to even when ulcerative action has set in, provided plainly inflammatory symptoms continue. Its effect is aided by warm, or, in violent cases, cold local applications. In cases of ulcers the very strictest rest and diet must be recommended, with calomel in $\frac{1}{4}$-$\frac{1}{2}$ grain doses two or three times daily, and emulsions; as well as blistering in the region of the cœcum kept up for some time. During convalesence astringents may be used. If perforation takes place, the main medication is to prevent peristaltic motion, and a half to even one grain of opium may be given every half hour at first, afterwards less frequently, but still keeping up its action till pressure produces no longer pain. Mere ulceration does not indicate opium, but sudden occurrence of circumscribed peritonitis does. In cases of opening of perityphlitic abscess into the bowel, it is irrational to give opium, as the evacuation of pus is to be favored. Continued poulticing is of the most advantage in such cases. Abscesses of moderate extent may frequently be resolved by blistering; otherwise early evacuation is recommended. In absence of fluctuation, the spot is to be chosen for opening that is most painful to the touch.

Now, though the author has not advanced any thing that was not previously known, a perusal of his article cannot but give clear and true notions on a subject frequently badly, or not at all, understood. —*Am. Med. Month. and N. Y. Rev.*, Nov. 1860.

SHAKSPEARE'S MEDICAL KNOWLEDGE.

Dr. Bucknill, in his work on the Medical Knowledge of Shakspeare, gives an interesting account of the state of Medical science—if so it may be dignified—in the fifteenth and sixteenth centuries. He was led into this research because he thought, and truly enough, that to judge fairly of Shakspeare's medical knowledge, it was necessary to ascertain the condition of medicine in his day. Dr. Bucknill was not able to find the sketch he sought for in any of our histories of medicine; and he therefore had to dip into original authorities for information on this point. His narrative is both interesting and instructive.

His researches have led him to the fact that Shakspeare's ideas on medicine, and even the trivialities and absurdities he alludes to, correspond to those prevailing in his time among its professors. If he says that the toothache is owing to a humor or a worm, he has John of Gaddesden's authority for saying so. If he recommends "parmaceti for an inward bruise," a reference to Woodall's Surgeon's Chest shows that spermaceti was thought a good internal remedy.

Medical science was raw in Shakspeare's day, and its social foundations indifferently firm. Priests during the dark ages were doctors; but as science dawned, and secular knowledge became necessary for a doctor, the two businesses were divorced by order of a Pope, who objected to his clergy being in anywise laic. Fuller gives many examples how the "medicine for soul and body went hand-in-hand together" in those days. He tells of Dr. Attwell, "parson of St. Ive, well seen in the theoricks of physic;" and of Dr. Phreas, of London, who practiced medicine in Italy, and whom the Pope made Bishop of Bath and Wells. John St. Giles was physician to King Philip of France, and "in his old age famed for his divinity lectures at Oxford;" and according to Matthew Paris, Robert Grosthead, Bishop of Lincoln, "sent for this Mr. John Giles, learned in physic and divinity, that from him he might receive comfort both for body and soul."

Papal anathemas against priestly medical practice are regarded as the cause of divorce between medicine and surgery. Priests not wishing to lose the pay of the profession, and yet not able to attend the sick sent their servants, or the barbers of their communities, to bleed and draw teeth, and so on. Doctors, however, afterwards returned the compliment. The College of Physicians excluded all persons in holy orders. In 1617, Dr. Leighton was summoned by the Censors to give an account of himself; and was at last denied the College license, because he was in holy orders. The statutes of the College forbade any one in orders to practice. Still, however, the doctor persisted, and was arrested, censured in the Star Chamber, "*and lost his ears.*"

The Church, however, kept her fingers in the College. The act of 3d Henry VIII. provides that candidates shall be examined, approved, and admitted by the Bishop of London or the Dean of St. Paul's. At this time of day the practice of medicine appears to have been in the hands of very primitive healers. In the 14th and 15th of Henry VIII. the faculty of physic became a corporate body, with large powers, which were afterwards extended in later reigns, and often rigorously put in execution. In this reign also, barbers and surgeons were made one company; but the act provides—"That no barber in London shall use surgery, and no surgeon exercise shaving." Apothecaries, also, were in existence in those days, but they got no charter of incorporation until the time of James I.

Physicians' College, however, was paramount in power; and appears to have been continually in hot water with the surgeons, the apothecaries, and irregular practitioners. Dr. Caius successfully defended the rights of the College against surgeons who had the presumption to prescribe "inward remedies in the scrofula, French pox, and any kind of ulcer or wound."

Both physicians and apothecaries, notwithstanding their constant quarrels, appear to have been consistent in one thing, viz., in not sparing their patients' pockets. The apothecary's bill, Dr. Gideon Harvey says, often ran up to £20 and £30 in a fortnight, and even £50, "when the ingredients of the whole course could not be computed to stand him in 40s. But that which sounds worse than all is that not long since an apothecary of our suburbs brought in bills for less than three-quarters of a year's physic to nine patients, amounting to £1500;" and all this "for little diseases,—a sweating bolus, or a portion of mithridate, for a pain in your head and limbs; coughs, stuffing in the head, etc., the farthest point the apothecary can safely steer." The irregulars were also very troublesome; one George Butler, in 1663, charged 30s. a-piece for twenty-five pills—£37 10s. for a box of them! They were doubtless of efficacy, for three of them given to Mrs. Styles for a sore leg, killed her the night she took them. One Dr. Tenant, who also required prosecution by the College, "charged one pill at £6."

We may, however, infer from these facts, that the physicians did not forget, themselves, to charge a satisfactory fee; and, indeed, physic in those days, seems to have been right well rewarded. We hear nothing of gratuitous medical services; that piece of special wisdom was reserved for later days. Physicians then rode in coaches, like noblemen, dressed in velvet, and assumed a highly intellectual position; in fact this high esteem of the public seems to have been granted to them rather for their learning and classical abilities than for their knowledge of physic. Their fee was a guinea then, as now; but as the guinea represented a much greater amount of commodities in those days, it was much greater than the fee of the present day. Linacre and Caius represented the profession, and even aristocracy itself, in the shape of the Marquis of Dorchester, "esteemed the Fellowship of the College an honor second only to that of the peerage;" and he presented his library, of the value of £4000, to the College.

They held their own, too, bravely did the Fellows of the College. The great Walsingham, Elizabeth's statesman, could not beat them. He had an admiration of empirics, and was wroth with the College for restraining one Margaret Kennix from curing and ministering to diseases and wounds by her simples, in the applying of which, said Walsingham, "it seemeth God hath given her an especial knowledge." And he orders the College, in the name of her Majesty to leave her in the quiet exercise "of her small talent," adding a threat if he was disobeyed. The College, however, braved him, and his threats, and refused, pleading "conscience and oth." Five years later, Walsingham again pleaded in favor of Not, who had been his own doctor, and whom the College had sent to prison; but in vain. The College's powers in those days were something beyond a name, and the fact of its bearding Walsingham, shows the high social position of its Fellows. Probably in the scientific treatment of disease they were really little more advanced than the empirics and apothecaries and surgeons, whom they prosecuted; but of the high intellectual standing, and learning, and wealth of the physicians in the times of Shakspeare, no doubt can exist.

Shakspeare's eldest daughter married a provincial doctor of renown, Dr. Hall; and Dr. Bucknill suspects that from him the poet may have picked up much medical information. Surgeons in those days had no powers like the doctors; they were merely incorporated. Physicians could practice surgery; but surgeons were forbidden to touch medicine. The surgeon, however, has had his revenge, for, as Dr. Bucknill observes, "surgeons now frequently practice physic to a greater extent than their own art." The surgeon was, in fact, merely the instrument or hand of the physician. The absurdity was, however, too glaring, and proofs enough remain to show that surgeons did treat some constitutional diseases.

Such is, in short, a general account of the condition of medicine in the days when Shakspeare lived and sung; and the profession is, we consider, much indebted to Dr. Bucknill for his interesting details on the subject. We are sure that the readers of his interesting volume will therein find their profit and account. We shall not venture to criticise the proofs, as extracted from the works of Shakspeare, given by Dr. Bucknill, of his medical knowledge. Perhaps in all great works of great minds numerous references to the healing art, in the way of illustration or otherwise, will be found. Shakspeare, doubtless, had that excelling gift of a good memory; and as he passed through life and mingled with the world, must necessarily have had numerous opportunities of hearing the sayings and watching the doings of doctors, and every thing he once saw was engraven on the tablet of his memory. We have, however, found great pleasure and satisfaction in following Dr. Bucknill through his ingenious developments of Shakspeare's medical knowledge, and are sure that not the profession only will have to thank the author for many a pleasant hour's recreation spent in Shakspeare's company under this newly-developed phase of his great knowledge.—*London Medical Times and Gazette.*

MEDICAL PRACTITIONERS IN SWITZERLAND.—According to the Echo Medical Suisse, there are in Switzerland, for a population of 2,392,740 souls, 1449 medical practitioners (951 of these having their private pharmacies), 280 pharmiciens, 781 veterinarians, 44 dentists, and 730 persons pursuing minor surgery.

BIRTHS AND DEATHS IN RUSSIA IN 1857.—Throughout the Russian Empire there were born 2,993,101 children; 1,533,408 males and 1,459,693 females; and the deaths amounted to 2,010,736, viz.: 1,014,574 males and 996,162 females. Of these, 1,003,662 children died prior to the age of 5 years; and between the ages of 5 and 10, there died 100,014—each sex contributing nearly equally its contingency in both categories. With respect to very aged persons, the following extraordinary figures are given in the official reports, and resemble those which appeared in the former annual reports. Either some gross error must exist, or Russia is the country *par excellence*, for longevity. Between 100 and 105 years, 255 persons (140 men and 115 women) died; between 105 and 110 years, 108 (68 men and 40 women); between 110 and 115 years, 38 (25 men and 13 women); between 115 and 120 years, 25 (13 men and 12 women); between 120 and 125 years, 8 (4 men and 4 women); between 125 and 130 years, 4 (2 men and 2 women); and between 130 and 140, one man.—*Russland Zeitung*, 1859.

PART IV.—BI-MONTHLY ABSTRACT.

SURGERY.

Operation for Bow-legs by the Subcutaneous Section of the Tendons of the Musculus Semi-membranosus and Semi-tendinosus. By A. G. Walter, M.D., Pittsburg, Pa. (Medical and Surgical Reporter, Philada. Aug. 18.)

In our former number we noticed a new operation for the relief of Knock-Knees, by the same gentleman. He now proposes a division of the tendons of the muscles above named for the opposite condition—bow-legs. Several cases are reported, one of which we add:

"Albert Gœhring, a lad of 5 years of age, of Birmingham, Pa., born healthy, and thriving, soon began to show an unnatural curvature outward of both lower limbs, which, increasing with his growth, became a source of great anxiety to his parents; though being persuaded that the deformity was seated in the shafts of the femur and crus, and would ultimately rectify itself. The little fellow grew tolerably active, his limbs however remaining curved, with the peculiar swinging motion of the body, its disproportion in size to that of the lower limbs, which were firm and fleshy, knees widely separated and apparently stiff, while the feet naturally approached each other. Having satisfied ourself that semirotation of the head of the tibia inwards and backwards, in consequence of structural contraction of the tendons of the semi-membranosus and semi-tendionosus, was the cause of the unnatural curvation of the articulation, those tendons were divided subcutaneously by a single puncture, above their insertion into the tibia, on December 13, 1858; a hollw cushioned splint was applied from below the groin to below the inner ankle, and confined there by a bandage from below upward. No febrile reaction following, a few days after, gradual pressure by the turns of a roller was exerted upon the knee-joint, approximating it closer and closer to the splint. It was gratifying to observe the steady painless yielding of the joint to the increase of pressure, which had been found unavailing without tenotomy, as the semi-membranosus and semi-tendinosus, not yielding to extension, would rotate the knee inwards and backwards, and thus bend the joints.

At the expiration of two weeks, the articulation was restored to its natural line. A long pasteboard splint was then substituted for the tin one, which was confined to the limbs by a roller, and the patient allowed the use of his limbs. A few weeks later, an apparatus with a joint at the knee and ankle was then applied to his shoes. This was continued for five months, then left off by his parents, the deformity being effectually relieved. At the present date, the boy is very active, no trace whatever of any deformity being noticeable. The peculiar grating, so perceptible before the operation on rotating the tibia while the knee was held in a bent position, has entirely disappeared."

Wound inflicted by a Sting-Ray. By E. R. Mordecai, of Mobile. (New Orleans Medical News and Hospital Gazette, Nov. 1860.)

John ——, an Italian fisherman of Mobile Bay, aged 26, of temperate habits, was wounded by a sting-ray. The barb of the fish entered the lower third of the leg, between the bones.

Forty-eight hours after the accident the patient had a dry brownish tongue, labored respiration, a cold clammy skin—in a word, the usual concomitants of depressed vital power. I thought he would die at once. But, after a desperate struggle, his system rallied under the use of powerful stimulants, a generous diet, and medicine directed to the restoration of the secretions.

As for the wound, from first to last, it looked dark and foreboding—with rugged edges, and discharging a brownish serous fluid. The surrounding skin was raised by collections of this discolored serum. While here and there along the leg might be seen isolated patches of elevated epidermis, presenting the same ill-omened phlyctenoid aspect.

On the morning of the 10th day he complained of loss of sensation in the leg. The dressings were removed, and mortification stared me in the face. It had set in during the night—was complete for the lower third, and inevitable for the entire leg.

Where nature would establish the line of demarcation was not apparent. To wait for it was out of the question.

It was determined, in consultation with Drs. Herndon and Redwood, that amputation of the thigh offered the only, though doubtful, chance of life.

Chloroform was given—little blood was lost—and the operation lasted but a few moments. As I grasped the saw to remove the limb, I observed that his eyes were glazed and set. Before the stump was dressed my patient was a corpse. Whether this sad result was due directly to the chloroform, or to the nervous shock occasioned by an operation on an enfeebled body, I know not.

The case is recorded to mark the danger of a somewhat uncommon injury.

Excision of the Elbow-Joint, and of the entire Ulna. By GEORGE WILLIAMSON, M.D. (Notes on the Wounded from the Mutiny in India. North American Medico-Chururgical Review, Nov. 1860.)

H. W., twenty-six years of age, was admitted into the Hong-Kong general hospital, in August, 1857, on account of acute pleurisy and hepatitis. In a few weeks a large abscess near the left elbow-joint was evacuated, and from this time the ulna became necrosed, permanently enlarged, and a few spiculæ of bone came away. A year subsequently he was received into the Fort Pitt Hospital, with numerous sinuses along the inner side of the ulna, and a probe could be introduced into the elbow-joint. His general health was good.

On the 30th of August, 1858, the whole of the ulna, an inch and a half of the humerus, and the head and neck of the radius, close to the tubercle, were removed by an incision along the inner and posterior side of the forearm. No vessels required ligation, and the arm was supported in a semi-flexed position on a gutta-percha splint. On the sixth day the greater part of the wound had united by the first intention, and by the twelfth day the union was complete. At the time of the report, four months after the operation, the man could bend his forearm, raise his hand behind his head, and lift a twenty-eight pound weight from the ground. He could also pronate and supinate the hand; there was no anchylosis of the wrist-joint, and he could use his fingers well.

On Amputation of the Hip-Joint. By Dr. JULES ROUX. (The North American Medico-Chirurgical Review.)

In our last issue we presented our readers with a short abstract of a paper by Dr. Roux, on secondary amputations after gunshot injuries of the bones; and in a recent communication to the Academy of Sciences, he reported six cases of coxo-femoral disarticulation, performed in his wards at the St. Mandrier Hospital, at Toulon, upon the sailors and wounded soldiers of the Italian army. Two of these cases resulted in death, but both sailors had comminuted fractures of the upper third of the thigh-bone, with laceration of the femoral vein and extensive injury of the soft parts. The patients succumbed, one in five, the other in eight hours; thus adding confirmatory evidence against the success of primary amputation at the hip. In the four successful cases, the operation was secondary or consecutive, and the cure was complete on the seventy-first, sixty-sixth, fifty-eighth, and seventy-seventh days after the operation. All the patients, except the two fatal ones, were placed fully under the influence of chloroform, and the bleeding vessels, including the femoral and larger veins, required at least sixteen ligatures. The dressings consisted of the application of ten twisted sutures, with adhesive strips, and a piece of greased lint over the wound. A drainage tube or tent was retained in the parts for twenty-five or thirty days. Light but nourishing diet, Bordeaux wine, a decoction of quinine and aconite, with attention to the bowels and secretions, cleanliness and ventilation, constituted the after-treatment.

Dr. Roux also gives a statistical table of the cases of coxo-femoral disarticulation occurring in the French marine hospitals. It contains twelve cases, including his own, of which seven terminated fatally. Five of these operations were primary, or performed several hours or days after the accident, and all were unsuccessful; four were secondary or mediate, forty-two days to seven months intervening between the accident or disease and date of operation, and three were cured; three were ulterior or consecutive, the operation being performed one or several years after the receipt of the disease or injury, and only one resulted in death.

The author lays it down as a rule, that comminuted fracture of the thigh-bone, in any portion of its extent, rarely requires amputation; and insists, when the fracture is seated in the upper third of the bone, that amputation at the hip-joint should not be performed. In support of his opinion he gives a brief account of twenty-one cases received into the St. Mandrier Hospital after the Italian war, in which the superior third of the thigh-bone had been fractured by balls, and in all the fracture had become consolidated. Secondary coxo-femoral disarticulation was practiced successfully in one case, six months after the occurrence of the injury, and the remaining twenty were cured. Amputation should, therefore, as a rule, be confined to those cases where the two lower thirds of the bone are injured; and if after several months a cure is not effected, and amputation becomes necessary, whatever may be the portion of bone fractured, coxo-femoral amputation should be preferred, as in this way all the diseased bone is gotten rid of. The longer the operation is delayed, the greater is the chance of recovery.

Effects of Cold in the Crimea. (Oglethorpe Medical and Surgical Journal.)

From a translation of a portion of the Report upon the Medical Affairs of the French Army, which we find in the October number of the Oglethorpe Medical and Surgical Journal, we extract the following very interesting and truthful account of the effects of cold upon the soldiers engaged during the Crimean War:

"There were a great number of cases of congelation during the winters of 1855 and 1856; but the facts observed have shown notable differences. In 1855, the cold had not been very intense, but there was an abundance of rain. In consequence, the ground was soaked with water, especially in the trenches. The feet of the soldiers standing in ice-water suffered from the effects of congelation similar to those we had observed in 1836, under the walls of Constantine (Algeria). There was swelling, accompanied with redness and gangrenous spots. The congelation produced the six degrees assumed by Dupuytren for burns. We know that excessive cold and heat produce the same effects. Disorganization was effected by humid gangrena.

"On the contrary, during the rigorous winter of 1856, when frequently the thermometer descended 20 degrees (C.) below zero, the cases of gangrene observed were of the dry and sudden form. Sick or wounded soldiers, carried to the ambulance on a litter, or soldiers asleep under their tents, had their extremities frozen. The cold pushes back the liquids, the parts, dried up, and reduced in volume, turned, as it were, into parchment, become white or discolored; afterwards a black, dry eschar is formed—a veritable mummification.

"When people in Russia travel in sleighs, without taking the precaution to cover nose and ears with fur, it happens in the same way, that nose and ears suddenly turn white, become wrinkled, and are deprived of vitality forever. The ears of our soldiers have been protected by a cap of red cloth, called 'chachia,' that was distributed among them.

"Up to the time of the dropping off of the congealed part, the suffering is trifling; the appetite is preserved, and the fever of elimination very moderate. All that is necessary is to envelop the part in wadding, the soft and light contact of which is beneficial. The patient frequently does not imagine at all that his affection is so serious, on account of this absence of pain. But, unfortunately, afterwards, when the big toe, or half of the foot, or the two feet, separate from the body, and expose a large wound to the irritation of the air, the pain becomes violent, the fever rises, the great viscera become affected, the existence is placed in danger, and death often supervenes, defying medical art.

"As the circle, bordering on the dead and on the living parts, grows grows larger, the suppuration, already fœtid, becomes more abundant. The soft parts detach themselves in pieces, drawing after them parts of the skeleton. The bones left behind, deprived of their ligaments, turn black, and later, drop off spontaneously. The slow and patient eliminary work of nature must be scrupulously respected. If, for instance, the surgeon should try to disturb a phalanx that is scarcely retained by its corroded ligaments, in order to hasten on the eliminary process, the wound would very likely be soon covered with proud flesh of a bad character, soft, puffed up, bleeding from the least contact, and always threatened with the hospital gangrene. Amputations made in the Crimea for congelation have not succeeded. Dr. Boudier, chief surgeon of an ambulance of division, attributed, in one of his reports, this want of success to the shattered state of health, the marasm of the patients, who were almost all suffering with chronic diarrhœa. The uselessness of operations, made it a duty for the surgeons to abstain from them; to restrict themselves to keeping the wound clean; to disinfecting the wounds with chloride of lime; and to leave to the efforts of nature alone, the elimination of the dead parts. The abstention of the surgeons has evidenced the fact that nature traces the circle of demarcation between living parts and dead ones, much better than the hand of the surgeon, and at a lesser sacrifice. Art assigns to amputations 'select places' (lieux d'election), a circumstance that compels the surgeon frequently to sacrifice portions of the limb that might be saved; while nature, eminently conservative, takes away only what cannot live any more. Observing the work of nature, we become convinced that the indication of select places for amputation is frequently theoretic, arbitrary, not borne out by practice; and that it may sometimes be of advantage to amputate on the line of demarcation between the healthy and sick parts. Before my departure for the Crimea, I met with, at the hospital of Marseilles, 300 soldiers with partial congelation of the feet, in all of whom nature, unaided by art, had produced the cure. She did not at all respect the decisions of the learned surgeons in regard to select places. When only a portion of the big toe could be saved, even when all the other toes were dead, she did preserve them. In two patients I saw the second phalanx of the little toe left alone, after all the other toes had dropped spontaneously; with others it was the thumb and little finger that were left. Nothing is more diversified and more ingenious than the proceedings of nature in her conservatory efforts. The surgeon has only to imitate her, and let her alone."

Recto-Vesical Lithotomy—Bozeman's Button Suture. By J. F. NOYES, M.D. (Boston Medical and Surgical Journal.)

History shows that this operation (recto-vesical) dates from about the beginning of the present century. M. Sanson, in an inaugural thesis, first described the operation. Of the several methods therein laid down, Maisonneuve, in later years, made an important modification. These are all fully described in systematic works on surgery, and call for no special mention from us here.

From the frequent evil results and ill success consequent upon the escape of stercoraceous matter into the bladder, and infiltration of urine, preventing the cicatrization and healing of the cut, the operation became obsolete.

The discovery of the "silver wire suture," the wonderful success consequent upon its use in treating vesico-vaginal fistules in the hands of Dr. Sims and others, led naturally to a trial of it in this (the recto-vesical) operation. Accordingly, we find that, in 1859, Dr. S. first applied it in the case of a recto-vesical operation performed by Dr. Bauer, of Brooklyn. The wound healed by the first intention, in eight days, and its employment here was announced as the beginning of a new era in lithotomy. At that time we had our second patient on whom we were about to operate for stone, and we decided to give it a trial.

The following is a report of the case:

A Mr. Jones, of Corinna, Me., aged 39, of a healthy and vigorous constitution, for more than three years had been troubled with more or less pain and distress in the bladder, particularly when urinating. At the time of our first visit, he had been confined to the room, under the care of a physician, for several months, and was in a very emaciated and feeble state from protracted suffering and from a large open abscess under the throat.

Introducing carefully a sound, I detected a stone lying loosely in the bladder. Upon further examination, it was thought best to postpone the proposed operation for at least one month, with the hope that he would then be in a more favorable condition. At the expiration of this time, however, our patient was scarcely any better, and there appeared nothing to be gained by delay.

Oct. 21st, 1859, in the presence of a number medical gentlemen, and with the assistance of Drs. Benson of Newport, and Wilson of Dexter, the patient being fully etherized and placed in a convenient position on the left side, with the thighs flexed, I proceeded with the operation as follows: Dilating the rectum with an ordinary speculum (not having Simms's at hand, which I very much regretted), the bladder being partly filled with lukewarm water, and a sound introduced and held by an assistant, I then made out with my finger the situation and limits of the prostate gland. With a two-edged scalpel, a cut was made through its central portion and bilaterally enlarged sufficiently to enable me to introduce my index finger, when it was dilated a little. The forceps were now introduced, the stone seized and extracted without much difficulty.

The stone is of an oval form, quite hard, with a rough surface, and measures, in its long diameter, an inch and a half; in its short diameter, three-quarters of an inch. I have not yet had it analyzed, so as to know of what it is composed. Six silver-wire sutures were required to bring together and coaptate the edges of the wound. Upon these I adjusted "Bozeman's button," in the manner I had seen him apply it in the case of a large vesico-vaginal fistula, operated upon by him in the fall of 1858, at the "Hotel Dieu," which united by the first intention, and was cured in eight days.

On the twelfth day after the operation I removed the apparatus, when it was found united by the first intention, save a small place in the centre. I could not be surprised at this slight failure, in view of the very unfavorable state of our patient at the time. A few touches, however, with nitrate of silver, from my colleague, Dr. Benson, under whose care the patient was left during my absence, was all that was necessary, as it closed by granulation in a short time. It was observed that a sliding down of a fold of the rectum over this small opening seemed to guard against the escape of any thing into the bladder while it was healing.

Our patient was obliged to keep his bed for a long time, on account of a large bed-sore on one of his hips, which was very slow in healing. But at the end of three months, he was weighed, and it was found that he had gained about seventy pounds, making his entire weight two hundred. Both of these patients (the first operated upon by the lateral operation more than three years since) are now in good health.

It may be important to state, in closing this report, that both of them had used, for a number of years, water from wells containing lime.

Case of Extensive Compound Fracture of the Cranium. Severe laceration and destructian of a portion of the brain, followed by fungus cerebri, and terminating in recovery. By Bedford Brown, M.D. (American Journal of the Medical Sciences.)

Sufficiently numerous cases are on record of perfect recovery after dangerous and extensive injury of the brain from mechanical causes; but certain peculiarities in the treatment adopted during the progress of the present case, and the success attending them, seem to justify our adding it to the list of those already published of a similar character.

The subject of the present case was a boy about ten years old, who was kicked by a horse recently shod, producing a compound fracture, with depression, fractured bones being imbedded to the depth of three-quarters of an inch in the substance of the brain. The fracture occupied a large portion of the right side of the frontal bone, extending from just above the superciliary ridge nearly to the coronal suture above, and in the opposite direction from about the central portion of the os frontis to its point of union with the parietal bone. The opening in the skull would have measured about two inches in one direction, and an inch and a half in the other. The fractured bones, though deeply depressed, were rather loose from being entirely separated from the periosteum and dura mater, and, when completely removed, left the entre right anterior lobe of the brain exposed. The form of the wound was rather semilunar, corresponding to that of the horseshoe. The sensibilities and voluntary powers of the patient were perfect. Indeed, the cerebral functions were apparently entirely unimpaired. A large amount of blood had escaped by hemorrhage. Portions of lacerated brain, that had been forced out, were adhering around the edges of the wound, in all at least a teaspoonful.

I requested Dr. Roan, my partner, to attend the case with me. On commencing our examination, we found the sensibilities of our patient so extremely acute as to prevent all further proceeding without the aid of some anæsthetic. Having no guide to govern us in forming an opinion of the effects of this class of agents on a brain so dangerously injured, we discussed the probable results of the procedure with caution and prudent deliberation. I am not aware of any published case of the kind, wherein anæsthetics were resorted to during the operation for the removal of the depressed bones; usually there exists no necessity for it. But this means affording the only chance of quieting the violent struggles and resistance of the patient, we proceeded cautiously, while the most serious apprehensions suggested themselves to our minds of the result, to administer by inhalation a combination of sulphuric ether and chloroform until the system became completely insensible. On examination, the fractured portions of bone were found to have been driven deep into the brain, backwards and upwards under the sound bone, detaching the dura mater therefrom to a considerable extent. The fractured portions, being separated from both periosteum and dura mater, were removed by means of the elevator and forceps. The spiculæ were so numerous and deeply imbedded, that we were under the necessity of proceeding cautiously and slowly. We removed in all ten pieces, some of them two inches in length. This part of the operation occupied at least fifty minutes, during which we were compelled to repeat the anæsthetic several times, as the effects subsided.

Our preconceived ideas in regard to the specific action of anæsthetics would very naturally deter us from their use. Their effects in this case on the brain, at least so far as the circulation of that organ is concerned, were made perfectly manifest. Here a large portion of the surface of the organ was completely exposed to view, and any physical change in the brain, produced by the agency of the remedy, could be easily observed. Considering the various speculations in regard to this influence, the effects in this case were highly interesting. Hemorrhage, which had been free previously, ceased almost entirely after the full anæsthetic impression had been produced.

It is conceived by the profession that under the impression of chloroform the actual vascularity of the brain is increased; that absolute congestion takes place. The present case afforded an ample opportunity to determine this question definitely. Whenever the anæsthetic influence began to subside, the surface of the brain presented a florid and injected appearance. The hemorrhage increased, and the force of the pulsations became much greater. At these times, so great was the alternate heaving and bulging of the brain, that we were compelled to suspend operations until they were quieted by a repetition of the remedy. Then the pulsations would diminish, the cerebral surface recede within the opening of the skull, as if by collapse, the appearance of the organ becoming pale and shrunken, with a cessation of the bleeding. In fact, we were convinced that diminished vascularity of the brain was an invariable result of the impression of chloroform or ether. The changes above alluded to recurred sufficiently often, during the progress of the operation, in connection with the anæsthetic treatment, to satisfy us that there could be no mistake as to the cause and effect. Again, these changes began invariably to appear with the earliest influence of the remedial agent. As consciousness diminished, in a corresponding ratio there was diminution of vascularity; and as the mental powers returned, the contrary would occur.

I feel satisfied that the congestion detected in fatal cases from the use of anæsthetics, is not the cause of the fatality, but the consequence of too great an influence exerted on the nerves presiding over the processes of respiration and circulation. When the sensibilities of these systems of nerves are so far impaired as to fail to respond to the stimuli of air and blood, the equalization of the circulation is immediately destroyed, hence the accumulation of the fluids in the larger vessels. When anæsthetics are absorbed through the lungs by inhalation, the agent is received directly into the circulation, and thence distributed to the remotest parts of the system, and in so doing each distinct system of nerves is brought under their influence simultaneously. The systems of voluntary, sensitive, special sensation and reflex nerves, sharing alike the complete anæsthetic influence. But those great systems of nerves, the pneumogastric and ganglionic, presiding over two of the most important and indispensable functions of organic life, are not influenced in corresponding degree with the others. Nevertheless, their action is diminished to a certain extent, as is evinced by the diminished frequency of the respiration and heart's action, and in the present case a decrease of cerebral vascularity. Further, under the full impression of anæsthetics, the capillary circulation is generally impaired, from loss of force in the action of the heart, and consequently the fluids collect in the large vessels of the system.

The actual influence exerted by anæsthetics, when introduced into the system of inhalation, is a question of paramount importance, not only in a surgical point of view, but one of exceeding interest in certain medical relations. This class of remedies have recently come into use for the treatment of convulsions originating from certain causes. In convulsions developed during or after parturition, or during an attack of *mania à potu*, or convulsive attacks originating purely from traumatic causes, the inhalation promises to accomplish much as a remedy.

In the present case we had every reason to believe that the anæsthetic influence was decidedly that of a direct sedative over both circulatory and nervous systems.

It is to this influence that the good effects of the anæsthetic in this case is due. We might go even still farther, by making the suggestion that the same class of remedies may be applicable to those violent acute cases of cerebral inflammation that occasionally occur after a proper degree of depletion. No less an authority than Prof. Skoda, of Vienna, has recently lauded very much the employment of chloroform in the treatment of acute pneumonia. In all of this testimony, we have sufficient evidence of the fact that chloroform and ether possess remarkable sedative powers over the circulatory system, when taken by inhalation.

After all the fractured portions of bone had been carefully removed, the appearance of the wounded brain was any thing but encouraging. All of the dura mater covering that portion was torn into shreds, which were removed with the knife. Also all of the cortical, and some of the medullary portions of that part of the organ were lacerated and loose. This was thrown out of the wound by the cerebral pulsations, and amounted in quantity to two or three drachms. After the wound had been thoroughly, but carefully, cleaned with the sponge, and there was a cessation of all hemorrhage, the edges of the integument were brought together by means of sutures, leaving the most dependent angle of wound open, to admit of the escape of such fluids as might accumulate. Over this a dressing was applied, moderately firm, composed of a linen compress secured by a bandage. Our patient soon reacted well and recovered his consciousness perfectly. We left him for the night with injunctions to the nurse to guard him against all excitement.

After-treatment.—In thirty-six hours after the injury, symptoms of inflammatory reaction began to make their appearance. An active inflammatory fever was developed, attended with pain in the head, vomiting, constipation, and preceded by a distinct chill. The pulse ranged at about 125 in the minute. There were slight indications of mental disturbance. As the patient had already lost a large amount of blood from hemorrhage, I deemed it prudent to treat the case without any further abstraction of blood; therefore, after prompt and free purgation, Norwood's tinct. veratrum viride was administered at intervals in sufficient quantities to reduce the circulatory excitement and keep it within safe limits; cold applications were made freely to the head. Under this treatment I had the satisfaction of witnessing a material improvement in all of the symptoms in twenty-four hours. This course was persevered in for three or four days with an entire and permanent relief of the inflammatory excitement.

Fungus Cerebri, a peculiar method of treating it.—At a period of about eight days from the reception of the wound, during which time there had been some purulent discharge, the dressings became displaced, and on their removal it was discovered that the sutures had cut their way through the integument, the wound had reopened, and a large fungus cerebri filling the entire opening was protruding nearly an inch from the skull. The appearance of fungus arising during the treatment of injuries of the skull and brain has ever been considered a formidable complication. The principal means recommended for the relief of this condition is that of mechanical pressure. The knife and application of various caustics for the destruction of the fungoid growth have also been recommended. The chief difficulty arising from ordinary mechanical pressure is, that when it is made with sufficient firmness to prove efficient, symptoms of compression of the brain and coma are liable to supervene from its use. To obviate these difficulties, an appliance was resorted to possessing all the requisite power for the perfect reduction of the fungus within proper limits, without any of the injurious effects of ordinary pressure.

This plan consisted of what might be very well termed a self-regulating graduated compress; the compress was composed of a common surgeon's sponge, of close and soft texture, and sufficiently large to more than cover the entire wound. Previous to application, the sponge was subjected to firm compression for the purpose of reducing its bulk to as small a compass as possible. This process is of importance as regards the action and ultimate success of the remedy. Before the application of the sponge, a piece of soft linen was laid over the surface of the fungus to prevent the rapidly forming granulations of the growth from making their way into the interstices of the sponge. Over this the sponge was applied, and secured moderately firm by a few turns of a broad roller around the head. The application of this peculiar compress created no injurious or unpleasant consequences whatever. The principle of action of this method of exerting mechanical pressure is one possessed by no other means; the true rationale of which may be explained thus: the constantly exuding excretions from the wound and fungus are gradually absorbed by the porous body of the sponge, from which the elastic compress is made to expand regularly and progressively, exerting a very decided but yet equable and gradual pressure, which ultimately, with scarcely a perceptible progress, reduces the morbid mass to its proper limits within the cranium and retains it there. At the end of a few days, when the dressings were removed, it was found that this object had been accomplished in the most satisfactory manner; the fungoid mass had been reduced even beneath the edges of the surrounding bone; the edges of integument were now brought nearly together by means of adhesive straps placed across the wound, and over this the sponge compress and bandage reapplied as before. The same dressings were renewed every few days as they became displaced, at each of which times a progressive diminution in the dimensions of the wound was observable; in three or four weeks the wound closed perfecty by union of the edges of the integument in a well formed cicatrix. The patient now, more than eight months since the injury, has continued in good health up to this period. When he is under the influence of much mental excitement, the pulsations of the brain are still visible through the large cicatrix.

PRACTICAL MEDICINE.

Pneumonia. By Austin Flint, M.D., Prof. of Clinical Medicine and Med. Pathology in the N. O. School of Medicine. (N. O. Medical News and Hospital Gazette, Sept. 1860.)

Prof. Flint details a history of sixteen cases observed in the N. O. Charity Hospital, during the winter of 1859–60, and adds the following remarks:

"Of the sixteen cases of complicated pneumonia, the disease was fatal in nine. More than one half of the cases of this class thus ended fatally. Let us first review the fatal cases in order to see if the nature of the complications or other circumstances, afford an explanation of the result, and also to judge of the bearing of the complications and other circumstances on the indications for treatment.

"Of the nine fatal cases, the disease was associated with pericarditis in four. In four cases, delirium tremens coëxisted. In one case, the disease was developed in connection with yellow fever; and in one case it was connected with parotiditis and typhoid symptoms. Delirium tremens and pericarditis were combined as complications, in one case.

"Circumstances of an unfavorable character, antecedent to the disease, existed in several instances. In one case the patient had been ill for a month with intermittent fever and other ailments, and the pneumonia was developed after his admission into the hospital. In one case the disease was preceded by pericarditis and pleurisy, affecting successfully both sides, which had confined the patient to bed for several months. An attack of delirium tremens preceded in one case, and in this case, gangrene of the lung occurred as a sequel to the pneumonia. In another case the patient had been discharged from the hospital two months before his admission with pneumonia, having been in the hospital for eighteen months with affections not noted in the history.

"As regards the extent of lung inflamed, in six of the nine cases, either the entire right lung, or the upper and lower lobes of this lung became involved. In three cases only was the inflammation limited to a single lobe, and of these cases, in one case the affection was noted in the lower lobe of the right lung; in another case in the lower lobe of the left lung, and the remaining case, in the upper lobe of the right lung. It may be of interest to inquire respecting the complications in the three cases in which only one lobe was affected. In two of these cases the pneumonia was associated with delirium tremens, and in the other case it was complicated with parotiditis and typhoid symptoms.

"That the fatal result was due, not to the pneumonia *per se*, but to the coëxistence of other affections and other unfavorable circumstances, is shown by the maximum of the pulse and respirations in six cases, in which these symptoms were noted. In four of these six cases, the pulse did not rise above 120 per minute, and in one case not over 100. In the remaining case it was 152 when admitted. The maximium of respirations per minute was in one case, 24; in one, 26; in one, 28; in two cases, 36; and in one case, 40.

"The treatment, in all the fatal cases, was sustaining, that is, consisting of alcoholic stimulants, and concentrated nutriment. Opiates entered prominently into the treatment in most of the cases. I suppose that in view of the complications and other circumstances, the propriety of supporting and soothing measures will hardly be questioned in these cases. The only room for questioning the propriety of the treatment, so far as these measures are concerned, relates to the efficiency with which they were employed. It seems to me probable that in some of the cases they might have been pushed to a greater extent, and certainly without injury, and possibly with success.

"The question may arise, whether the occurrence of complications might not have been prevented by measures of treatment. Without discussing this question, it is sufficient to say, that in nearly all of these cases the complications were already developed when the cases came under observation.

"The cases in which a fatal result did not take place, are of interest as furnishing illustrations of recovery under circumstances investing the disease with a degree of danger which does not belong to it intrinsically. While the complications and other circumstances in fatal cases afford an explanation of the result; in cases not fatal they render the fact of recovery sometimes remarkable. That, in view of complications and other circumstances, the treatment would fail in averting a fatal termination, is not surprising; but that it should succeed in certain cases, occasions surprise. Is it assuming too much to say that in fatal cases the result does not militate against the propriety of therapeutical measures; but in certain cases not fatal, the result affords evidence of the efficacy of these measures? I offer this inquiry not so much with reference to the present collection of cases as to a wider application; for, in the majority of these seven cases which recovered, the complications and other circumstances were not so unfavorable as in the fatal cases. But a minority of the latter cases do furnish grounds for the inquiry.

"Of the seven cases in which recovery took place, in one case the disease was complicated with pericarditis; in one with disentery; in two cases with bronchitis; in one case with delirium tremens; in one with phlebitis, affecting the femoral vein, and in one with fracture of the ribs.

"Incidental circumstances of an unfavorable character existed in some instances. In one case the patient had traveled on foot for five consecutive days, sleeping on the ground each night, before being attacked. In one case the patient got up, and went out of doors during the progress of the disease. In one case the patient had suffered much from intermittent fever and syphilis. In another case the health of the patient had not been good for two years. In the case in which the disease was associated with dysentery, the latter preceded for several days the development of the former.

"As regards the extent of lung affected in these cases, in two cases the inflammation extended over the entire left lung; in one case over the entire right lung; in one case over the lower lobes of both lungs, and in three cases it was limited to the lower lobe of the left lung.

"The pulse in frequency attained to a high maximum in more instances than in the fatal cases in which this point was noted. In one case it reached 144 per minute; in another 140, and in another 134; the same remark is true of the respirations. The maximum of the latter was in one case, 68; in two cases 40; in one case 36, and in two cases 32.

"The duration of the stay in hospital in the cases not fatal varied between eleven and seventy-two days, these being the two extremes. The shortest duration from the date of the attack to convalesence was six days, the disease in this case being complicated with bronchitis.

"The most remarkable case among those in which recovery took place, is the case of Maher, No. 8. In this case the inflammation extended over the whole of the right lung; the disease was complicated with pericarditis, and the pneumonia eventuated in abscess. Reference to the pulse and respirations as noted in the history, during the course of the disease, will show the condition of the patient for several weeks to have been such, that a fatal termination on any day would not have been unexpected. The case may serve to show that recovery may be hoped for under most unpromising circumstances. It also, as I cannot but think, shows the importance of pursuing a supporting plan of treatment in such cases.

"As regards the management, the same principles were followed in the cases which recovered, as in those which proved fatal; and the same in the complicated as in the uncomplicated cases. None of the cases seemed to claim reducing or depressing measures; on the contrary, indications for therapeutical interference, when present, appeared to point to the use of opiates, stimulants, and nutriment. In all the cases in which the disease was complicated, the associated affections were of a character to furnish additional indications for a sustaining plan of treatment."

Puerperal Convulsions—Expectant Treatment. By J. P. Maynard, M. D. (The Boston Med. and Surg. Journal, Dec. 1860.)

In a paper read before the Norfolk District Medical Society, Dr. Maynard reports seven cases of Puerperal Convulsions as having occurred in his practice, all of which terminated favorably under what he calls "expectant treatment."

These cases comprise primipara and multipara—all robust and plethoric. In two of these, the convulsions occurred previous, in two after delivery, and in three others both before and after. In only one were the forceps used. We extract the report of but one of these cases:

"CASE IV.—Mrs. L. D., æt. 26, primipara, size above medium, florid complexion, and vigorous health. July 9, 1857. Has had slight labor-pains since early morning. At 3, P.M., they were sufficiently strong to induce her to lie down. Soon after, in the midst of a severe pain, violent convulsions ensued, followed by the usual coma, and were repeated about every three-quarters of an hour until 10, P.M., when, during a convulsion, the patient was delivered of a living female child. The placenta came away within half an hour. Instead of any relief being afforded in this case by the birth of the child, the convulsions continued with unmitigated severity, and were rapidly exhausting the patient, whose appearance was now most unpromising. The extremities were cold, the countenance sunken, the pulse barely perceptible, and, she being unable to swallow, stimulants and beef-tea were given by injection. From 3, A.M., until 2, P.M., eight convulsions occurred, which had now apparently exhausted the patient's strength, and she seemed to be rapidly sinking. The pulse could no longer be felt; the respiration grew slower, and finally ceased. On auscultation, however, there was found a faint pulsation of the heart. Inflation of the lungs was resorted to, though apparently a hopeless expedient, and this was assiduously maintained for more than half an hour, when a slight gasp indicated the possibility that these efforts would not prove unavailing. A longer continuance of artificial inflation resulted in finally establishing the respiration. During the succeeding half hour the breathing barely rose to 6 in the minute; in an hour more, to 8; in three hours to 12. The patient remained in the profound coma of the last convulsion twelve hours, then gradually recovered her consciousness, without any return of them.

"In this case the convulsions were equally severe, and prolonged after childbirth as before. I should not omit to mention that the aid of both ether and chloroform was resorted to, in order to allay the spasms, without producing the slightest control over them, and it was therefore abandoned. Nourishment by the mouth while she was able to swallow, and by injections afterwards, was the sole reliance."

Dr. M. adduces some statistics showing that under the usual mode of treatment—by bleeding, purging, administration of chloroform, etc.—the percentage of mortality has been from 1 in 6 up as high as 1 in 4, and asks, have we not, in consequence of the frightful appearance of patients in this disease and the alarm of friends, sometimes embarrassed rather than assisted nature?

"In an able paper by Dr. Salter, some of whose views I cordially indorse, six cases are related in which he attributes the recovery to the use of stramonium. Might it not as properly be referred to his judicious avoidance of all the ordinary violent means which he condemns? Yet the administration of half-ounce doses of tincture of stramonium may be deemed bordering on the heroic, by one in favor of a conservative treatment. Had that remedy been given in the seven cases I have reported, stramonium might have obtained a credit to which it was not entitled.

"Is it then asked, shall all active medication be withheld? My experience replies, the less the better. But this does not imply inactivity on the part of the physician. On the contrary, to decide whether the involuntary muscles of the womb are able in due time to accomplish the labor, unassisted, with greater safety to the mother and child; or when, and to what extent shall artificial aid be given to hasten delivery; to relieve the bladder of the insensate form before its distention by urine adds to the danger of the patient; to test if the albuminous condition of the urine establishes the diagnostic that may prove probably a coincidence, but possibly a cause; all these, and other points that suggest themselves to clinical experience, will be found to tax the judgment of the physician and the resources of medical art, to insure the welfare of the patient, quite as much as the more popular routine of bleeding and deliquium, the use of powerful purgatives, and similar measures.

"To collate statistics requires only time and care—to draw just inferences from them is quite another thing. So much depends on the bias of the mind; prejudice, of which we may be totally unconscious, so easily creeps in to warp our judgment. It is so very natural as well as consolatory to think our remedy has cured, when perhaps the patient has simply survived both treatment and disease.

"It is well to bear this in mind, in analyzing statistics. In referring to the reported cases of Drs. Collins, Huston, Merriman, Dewees and Meigs, we find that, on an average, only four-fifths recover after bleeding, purgatives, etc. The six cases reported by Dr. Salter prove that they have all recovered without bleeding, and with stramonium. The seven cases that have formed the subject of this report show that an equally successful result may be obtained without the use of either—the entire treatment of the desease being based on the maxim, *Natura ducet.*"

Veratrum Viride; its Physiological and Therapeutical Action. By B. WOODWARD, M D. (The Med. & Surg. Reporter, Nov. 3, 1860.)

From an attentive observation of the effects of veratrum viride in a number of cases, Dr. W. is led to believe that its sole action is upon and through the nervous system, and that, unlike antimony, it has no effect upon the blood. Were its action upon the blood, we should see its effects after its primary action has passed off, which is not the case. There is no remaining depression as with antimony, neither is the nausea and vomiting, nor its cathartic action permanent. He has never seen it produce watery stools, nor known it to produce those peculiar ejections and dejections of the secretions of the stomach and bowels, which are often found so troublesome where antimony has been exhibited. He regards it as solely a *nervous sedative*, and in no case *a stimulant.* As soon as the system comes under its influence, the first phenomenon is a reduction in the frequency of the pulse. The next is a diminution of the frequency of the respiration. Carry it a little farther, and you have a sense of sinking or general prostration, referred by the patient to the heart.

After detailing several cases in support of his proposition that veratrum viride is a nervous sedative, Dr. W. adds the following statement of the effect of the drug upon himself:

"Wishing to know, from my own experience, what the physiological effects of veratrum were, I subjected myself to the experiment. I will premise, that I am nearly fifty years old, of a very nervous temperament, the natural rate of my pulse is 90, respiration twenty per minute; ordinary weight, 115 pounds; have no constitutional disease. I give my own condition, because, in endeavoring to ascertain the physiological effects of a medicine, it is important to take into account the physiological condition of the person experimented upon. At 8 P. M., after a busy day in my profession, I took eight drops of Norwood's tinct. verat. vir., pulse 94. In one hour, pulse 87, respiration 18; at 10 o'clock, pulse 80, respiration 16; took now four drops of the tinct.; at 11 o'clock, pulse 75, and respiration 14; felt a degree of lassitude, with a disposition to inflate the lungs very fully; at 12 o'clock, pulse 65, with a sense of sinking about the heart; respiration 12. I now took three drops more; in ten minutes felt nausea, pulse 50, respiration 8; in fifteen minutes more I vomited, pulse 42, respiration 6; had profuse diaphoresis and sense of utter prostration. I now took a teaspoonful of brandy, and in ten minutes, another; in half an hour, the pulse was 50, respiration 9. Took another teaspoonful of brandy; in twenty minutes, pulse 56, and respiration 11; in two hours from this time, the pulse was 67, respiration 14. I now went to bed, and slept well for six hours. When I awoke, it was with a most delightful sense of relaxation and rest; ate a hearty late breakfast, and went to my business as usual. Through the rest of the day, felt rather weak, but by night had entirely recovered from the effects of the drug. I thought I now understood the action of the medicine upon the heart and lungs. At no time did the brain seem to be affected, except that toward the last, there was a species of torpor, and my ideas were not very clear. I fear, Messrs. Editors, that your readers will think that I am still under the influence of veratrum viride."

Delirium Tremens. (Philadelphia Med. & Surg. Reporter, Nov. 3, 1860.)

At the conclusion of his service (at the Pennsylvania Hospital) on Wednesday last, Dr. Meigs made some remarks on the nature and treatment of delirium tremens, a disease which has recently again excited much attention. Dr. Meigs mentioned two cases, which he had seen, of persons that had died rather suddenly during attacks of delirium tremens; and, in both instances, the right heart was found filled with blood-clots, of great firmness and whitish-yellow color, indicating that they must have formed some time before death. It is often supposed that blood-clots, formed before death in the heart, always occur in cases where the death-struggle has been protracted. Yet, in both these instances, the death-struggle was short, while the character. consistence, and color of the clot left no doubt that it had been some considerable time in formation. These observations, taken in connection with experiments recently made upon animals, by various continental observers, seem to show that sudden death in delirium tremens arises from blood coagula in the heart, and that chronic alcoholism, or alchoholic poisoning, has a tendency to lead to coagulation of the blood In the experiments alluded to, the injection of alcohol into the cellular tissue and the veins was followed by clot-formation in the heart. Another remarkable circumstance is, that these clots were found in the right heart, blocking up, in one case, the whole ostium venosum, while, in ordinary cases, coagula in the heart are generally in the left side of the heart.

In reference to the question of the true nature of delirium tremens, the oldest theory of phrenitis is, of course, abandoned at present. Another opinion is still prevailing to some extent, namely, that it arises from a peculiar irritation of the brain, in consequence of a sudden withdrawal of stimulants. This theory, however, is not tenable, as it has been shown to be unsupported by the statistics. It is true, when persons are attacked by delirium tremens, they have often not drank much for three or four days previously, but this is owing to the saturation of the system with the poison, and nature resisting the further introduction of the deleterious agent by the establishing of vomiting, etc.; the delirium tremens is not the result of a suspension of stimulants, but the latter is rather a consequence of the saturation of the system by the alcohol, which finally terminates in delirium tremens.

The opinion which seems the most correct, and one to which we are led by the opinions of some of the best clinical observers, such as Laycock, Bennett, Carpenter, etc., is that delirium tremens is the result of *a slow toxication by alcohol.*

With this view of the nature of the disease, the indication of treatment is easily given. Give nature a chance to eliminate the poison ; put the system in the best possible condition to resist the toxication and to remove the poisonous material. It has been found in animals which have died from alcohol poisoning, that while various tissues were impregnated more or less with alchohol, the brain showed a much larger amount of the toxic agent than other tissues; and, hence, Carpenter concludes that there is what he terms a selective affinity between alcohol and the brain matter, producing the molecular condition of the cerebral substance, the symptoms of which we call delirium tremens.

The patient should not be confined to a dark small room, nor should he be tied and manacled, as was generally done formerly. Wholesome food, beef tea, milk, etc., are to be given.

The excessive use of opium or alcohol in this disease has been found to be injurious. Opium should never be given during the daytime, but only at night, and then in moderate doses.

As to alcohol, Laycock and Bennett object to it in toto, and, if used at all, it is only in cases where the patient is rapidly sinking. Many persons attacked with delirium tremens are suffering from granular degeneration of the kidneys, and uræmic poisoning is superadded, from which the patient dies, while he might have recovered from the delirium tremens.

On the Therapeutical Use of the Oxalate of Cerium. By CHARLES LEE, M.D. (American Journal of the Medical Sciences.)

About a year since, Prof. Simpson of Edinburgh first called attention to the medical use of this preparation, heretofore rarely known, even in the chemist's laboratory. Presented under such high authority, it is not surprising that in a few months there should be made, both in Europe and America, numerous trials of its efficacy in different gastric affections. It was used by Prof. Simpson, so far as I can learn, only in the vomiting of pregnancy. (Med. Times and Gazette, Sept. 1859.) But more recently it has proved useful in so much wider a field, that it promises to assume a permanent place among the mineral tonics, and, as such, some account of its therapeutic application may not prove uninteresting.

As regards the preparation itself, but few words are necessary. Its base, *Cerium*, was first isolated by Berzelius and Hisinger, in 1809; together with lanthanium and didymium, it is obtained in considerable amount, as the mineral *Cerite*, from the mines of Sweden; and in this country it has been found, in the mineral allanite, in the interior of New York, and near Bethlehem, Pa.

From either of these sources, it may be obtained by means of the mineral acids and sulphuretted hydrogen at a high temperature, and finally precipitated by a solution of oxalic acid, as described in an interesting paper by Mr. Mayer of New York. (Am. Journ. of Pharm., January, 1860.)

As thus obtained, the preparation is a white granular powder, an oxalate of the protoxide of cerium, inodorous and tasteless, insoluble in water, alcohol, and ether, but freely soluble in sulphuric acid, by which, as Mr. Mayer remarks, it may be distinguished from the other salts of the earths.

When I first began to use the cerium, I limited it to cases of advanced pregnancy, which had resisted all the ordinary remedies, such as creosote, hydrocyanic acid, ice, bismuth, etc. I specify *advanced* pregnancy, for in no case have I seen this troublesome symptom appear before the fourth month, without yielding to creosote, or prussic acid, or better still, minute doses of dilute sulphuric acid and brandy. The following case will illustrate these remarks:

Louisa M., æt. 32, was admitted to the obstetrical ward, 16th March, 1860, in the eighth month of her second pregnancy. For three months past, she has had at least two or three spells of vomiting every day, with utter distaste for food, and for some time has been under treatment in the city, without relief. When I first saw her, on April 3d, she was ordered to remain in bed, and to take one drop of creosote in emulsion every three hours; no improvement following in the next two days, this was changed for hydrocyanic acid, and subsequently for a mixture of dilute sulphuric acid and curaçoa.

After the lapse of a week, her condition was unchanged, with the exception of increased debility. All previous treatment was stopped, and a pill of two grains of oxalate of cerium was given every third hour. On that day she vomited once, two hours after taking the first pill; the following day she took the same amount before each meal, with no return of the vomiting. The cerium was continued one day more, and from this time until her confinement, April 22d, she enjoyed excellent health in every respect.

But, as I have remarked, the efficacy of oxalate of cerium appears by no means confined to the relief of vomiting in pregnant women. In the vomiting that often accompanies phthisis, in pyrosis, hysterical emesis, and the various dyspeptic conditions of the stomach, especially in atonic dyspepsia, I have found the effects of this remedy no less encouraging. In the following case it was given to check the vomiting of phthisis:

C. F., æt. 58, was admitted to the phthisis ward about the end of

March, 1860. He gained slowly in strength up to the middle of June, when he lost his appetite, and suffered from constant nausea and vomiting. This was always brought on by a severe spell of coughing, or by eating a single cracker, and the nausea remained even when the stomach was empty. Various remedies had been tried without relief, and on July 10th, he took for the first time, one grain of cerium before each meal; he vomited once that evening, and once the following day, but thenceforward improved rapidly, in great measure regaining his appetite; and although the vomiting sometimes returned when the cerium was stopped, a few grains of the medicine always promptly arrested it.

Finding the cerium so excellent in repressing vomiting, I tried its effect in fourteen cases of atonic dyspepsia, and uniformly with the same gratifying results. These cases were carefully selected, and only after an exact diagnosis, was the cerium treatment adopted, for benefit could not reasonably be expected where the dyspepsia was dependent on malignant, or other organic lesions. And here it is worthy of remark that, whether in relieving the nausea, or simply restoring the appetite, the effect of the medicine was perceptible almost as quickly as in the cases first quoted. The same point is emphasized in the paper of Prof. Simpson, already referred to, and it was indeed this fact—the rapidity of its therapeutic action—that especially engaged my attention, and, after repeated experiments with this view, I was inclined to regard it as peculiarly characteristic of the cerium.

In reference to the view of its therapeutic nature expressed by Prof. Simpson, who considers it a *sedative tonic*, I think it just to state that I endeavored to test its validity in several cases of acute and subacute gastritis, both idiopathic and supervening on debauch, or delirium tremens, but in none could I detect any amelioration of the symptoms. I make this remark with no disposition to impugn the opinion quoted, and only to record my experience so far as it extends; for I have neither the inclination nor the data sufficient to build a theory upon the therapeutics of an agent as yet so little known as the oxalate of cerium.

A new Instrument for the application of Anæsthetic and Stimulating Vapors for Deafness, Neuralgia, etc. By H. P. Dewees, M.D. (American Medical Monthly.)

This instrument consists of a delicate Bohemian glass retort, with a nozzle projecting an inch and a half, perforated by a capillary aperture. The supply-tube of the retort rises about an inch above the level of the curved neck, thus allowing greater freedom in pouring in the fluid to be evaporated. A cork stopper, with an elastic cap or holder to prevent its expulsion, or a ground-glass capillary tube stopper, closes this entrance, the one or the other to be used according to circumstances of application. The retort, when charged with the fluid to be evaporated, is then lodged within a hard glass receiver, three inches high, having its rim lipped deep enough to embrace the projecting nozzle of the retort, thus affording greater steadiness, besides serving as a catch for the elastic band retaining the nozzle in its projection. Small nipple-like catches are studded on the opposing centres of the rim of the receiver, to afford resisting points for the elastic back band which passes from under the posterior rim across the front of the supply-tube. By these two elastic bands, the mobility of action is fully commanded in the projecting nozzle.

The mode of using this simple but astonishingly effective little instrument requires but little practice to regulate it to the necessities of the case. About two drachms of ether are to be poured into the retort when secured in the receiver. The stopper should be firmly fastened, and the finger can be readily placed over the nozzle aperture during or after the introduction of the warm water or sand in the receiver. A rushing or blowing sound of the escaping vapor or gas immediately ensues through the aperture, if uncovered. The nozzle is then introduced within the auricle, and a little experience will soon teach the time and proper distance (from the drum) of the application. Moderately warm water will only be required for sulphuric ether; the degree of heat to be varied according to the specific gravity of the evaporable fluid, and according as a slow or rapid disengagement is needed.

Besides its use in etherization of the ear, this little instrument affords in neuralgia the most elegant mode for the application of local anæsthesia; the constant current from the evaporating ether, chloroform, etc., being readily applied directly to the suffering part, and made to follow the course of the painful nerve. When it is wished to apply the anæsthetic locally, I use a ring of adhesive plaster or of kid, to prevent the diffusion of the vapor over the surrounding parts. A common pill-box, perforated to admit the nozzle of the instrument, and applied over the part, also answers well. In inhalation, or in etherization, through the Eustachian tube, the capillary glass stopper will be found preferable, as it admits a sufficient admixture of air, as well as an outward communication for breathing.

In certain spinal or nervous disorders, this instrument affords a most ready and exclusive mode of applying heat, which can be made to vary from a simple glow to the moxa or absolute cautery. This is effected by igniting the jet as it passes through the capillary tube of the nozzle, the amount or force being regulated by the evaporizing temperature employed, and the distance from the part. The circular protections above mentioned are useful when the moxa is required.

In some of the diseases of the ear, where, besides the anæsthesia to the inner nervous distributions, a *local stimulant* or *irritant* to the drum or the auricle is wanted, this instrument offers a ready method of effecting the desired end, viz., by adding to the ether, or other fluid, a volatile stimulant, as for instance, the Ess. ol. sinapis, diluted. No practitioner should be without one, from the extensive capacity of the varied adaptability of the instrument. In diseases of the ear or in neuralgia, it can safely be intrusted to a patient for self-application. Many volatile substances can be directly applied through its agency.

In closing this note, I will state that Messrs. J. F. Luhme & Co., No. 556 Broadway, are the sole manufacturers of this instrument, and, I believe, at the price of $1.00.

New Treatment for Congestive Chills. (Savannah Journal of Medicine.)

In the New Orleans Medical News and Hospital Gazette for April, Dr. J. E. Keator reports a case of congestive chill, of almost hopeless character, which was promptly relieved by the internal administration of chloroform. He says: "I commenced by giving five drops in a little water. Within less than two minutes after the dose was swallowed the girl remarked that the burning at her stomach was gone, the vomiting ceased, and she seemed to rest a little. I continued giving it at intervals of from ten to fifteen minutes, for nearly two hours, in the same quantity as at first, and each time had the satisfaction of hearing from the lips of the patient herself, that it made her stomach feel so much better that she wanted more of it. At the end of two hours the pulse was full and strong at the wrist, the extremities were warm, and reaction was fully established." Quinine, in full doses, was next administered, another chill prevented, and the patient soon restored to health.

We have been accustomed to treat such cases with large doses of quinine and *small* doses of morphine in combination, at the same time using *dry* friction diligently, with coarse corn meal and mustard. The internal use of chloroform might be more prompt, but could not well be more successful than our practice. Would not the *inhalation* of chloroform be as effectual as its administration by the stomach, and still more prompt?

MISCELLANEOUS.

Dr. R. J. Patterson, for several years past the efficient Superintendent of the Ohio Asylum for Idiots, has, we understand, accepted the Superitendency of the Iowa State Lunatic Asylum.

We regret parting with our friend and neighbor, but cannot refrain from congratulating him upon being chosen to preside over what is destined to be one of the finest institutions of the kind in our country, and earnestly hope he may find his new duties quite as agreeable as pumping brains into the heads of idiots.

Vital Statistics of Melbourne.—It may be interesting to our readers to see the following extract from the registrar-general's report (which we find in a recent Australian paper) of the vital statistics of Melbourne and suburbs, for the quarter ending June 30, 1860, showing the actual daily mortality of persons under and over five years of age, in the district of Melbourne and suburbs, embracing a radius of 10 miles and including a population of about 118,000:

"The number of deaths occurring in Melbourne and suburbs during the quarter ending June 30, 1860, was 917, against 1,070 during the quarter ending March 31; the decrease during the quarter ending June, thus being 153, or nearly 17 per cent.

"The following table shows the causes of the deaths of persons of both sexes under and over five years of age, and the proportions per cent. of deaths from each cause, in Melbourne and suburbs, during the quarter ending June 30, 1860:

CAUSES OF DEATH.	Under five years.	Over five years.	Total.	Proportions per cent.
1. Zymotic diseases,	190	103	293	32·0
Sporadic diseases:				
2. Of uncertain seat,	113	43	156	17·0
3. Of nervous system,	85	48	133	14·4
4. Of respiratory system,	61	115	176	19·2
5. Of circulatory system,	..	17	17	1·9
6. Of digestive organs,	43	38	81	8·9
7. Of urinary organs,	..	6	6	·7
8. Of generative organs,	..	8	8	·9
9. Of locomotive organs,	..	4	4	·4
10. Of integumentary system,	2	1	3	·3
11. Old age,	..	13	13	1·4
12. External causes,	7	18	25	2·7
Unspecified,	..	2	2	·2
Totals,	501	416	917	100·0

In the list of zymotic diseases, we observe that 48 were scarlatina; 17, croup; 54, diptheria; 31, diarrhœa; 72, dysentery; and 1, cholera.

In diseases of the respiratory organs, 25 were bronchitis; 64, pneumonia; and 76, phthisis.

"The proportion to the total of deaths from zymotic diseases during the past quarter, as compared with the previous one, exhibits a decrease of from 35·5 to 32 per cent.; that of deaths from diseases of uncertain seat remains the same within a fraction. The proportion from diseases of the nervous system has decreased from 15·8 to 14·4 per cent.; but that from diseases of the respiratory organs has increased from 12·9 to 19·2 per cent. The remaining classes do not vary much in their proportions to the total, over the whole of the two quarters."

"The mean temperature and mortality for each quarter during the year ending June 30, 1860, were as follows:

	Mean Temperature of each Quarter.	Deaths during each Quarter.
Quarters ending—	Deg.	
September 30. 1859,	50·4	663
December 31. 1859,	62·5	976
March 31, 1860,	66·6	1070
June 30, 1860,	54·4	917
Mean temperature for the year,	58·5	....
Number of deaths during the year,	...	3626

"It will be observed that, during the past quarter, as during the three previous ones, the decreased rate of mortality has been concurrent with a diminished mean temperature."

INTRODUCTORY ADDRESS—STARLING MEDICAL COLLEGE.—We had great pleasure in listening to the Introductory Address delivered by Professor Carter, before the class of Starling Medical College, and a good audience from our city, on the 13th inst. After dwelling somewhat largely upon the low position which the law, based upon popular estimate, assigns to the physician, who is simply in their view a dispenser of drugs, of whose nature and operation he may be profoundly ignorant, he turned to the more pleasing survey of the recognition of the learned phsyician, by the truly educated and thinking portion of the community, and urged his hearers to make that position the object of their ambition. To do so they must study hard and must not be discouraged by mistakes and blunders they may commit in their earlier career. Patient observation and close study would soon enable them to conquer all such obstacles to success. The basis of a physician's education he laid in Anatomical and Chemical knowledge. To these he urged their special attention. He gave an interesting survey of the departments of Medical science. In speaking of the resources of Materia Medica, he cautioned them against being too easily carried away by the exaggerated praises of new remedies. He thought it better they should know how to apply a few remedies at the proper time, in the proper manner, and at the proper place. He especially dwelt upon the necessity of using common sense in practical medicine, and of careful observation of the natural phenomena of disease, and the influence exerted upon them by remedies, and of the great importance of distinguishing those diseases whose natural tendency is to a cure from those which incline to a fatal result.

This imperfect sketch can give but a very faint idea of the Professor's lecture, or of the pleasure its delivery afforded us. Its circulation and perusal will do good.

THE CASE OF SIR BENJAMIN BRODIE.—The medical profession, both in England and abroad, have recently evinced the liveliest interest in the distressing case of this distinguished gentleman, who at the advanced age of eighty-four, has undergone the operation of iridectomy for impaired vision in both eyes. About last December his sight began to fail, and on the twelfth of July of this year, Mr. Bowman removed a portion of each iris for supposed glaucoma. There seems to have been an error in the diagnosis, Mr. Hodgson and Mr. White Cooper regarding the disease as senile cataract, and did not recommend the operation of iridectomy. The left eye is very little improved, if at all, and in the right vision is completely lost; but as there is now a cataract very evident in the latter, sight may be restored by extraction of the lens, provided the eye is not glaucomatous. The high position of the unfortunate and much respected sufferer renders the case especially interesting in relation to the operation of iridectomy, one of equivocal value, which is now being so extensively tried. —*The North Am. Chirurg. Review*, Nov. 1860.

DIED.—Chapin A. Harris, an old and distinguished Dentist, died at his residence in Baltimore, on the 29th of Sept. last. Dr. Harris was a regular graduate, and for some years a practitioner of medicine, which profession he abandoned for that of dentistry. He was the founder of the Baltimore College of Dental Surgery, the first institution of the kind in the world, and, up to the time of his death, filled with great credit its leading chair. He is also the author of several standard dental works, and has been for years editorially, and as a contributor, connected with the dental and medical journals of the country.

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" II. ESSAYS AND CORRESPONDENCE.
" III. FOREIGN SELECTIONS.
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W. L. McMILLEN, M.D.,
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THE

COLUMBUS REVIEW.

FEBRUARY, 1861.

PART I.—REVIEWS.

URINE IN DISEASE.

1.—*A Treatise on the Pathology of the Urine, including a complete guide to its Analysis.* By I. L. W. Thudicum, M.D., Lecturer on Chemistry, etc., etc., London. I. Churchill. (pp. 429.)

2.—*Diseases of the Urinary Organs, a compendium of their Diagnosis, Pathology and Treatment.* By William Wallace Morland, M. D., Fellow of the Massachusetts Medical Society, etc., etc., etc. With Illustrations. Philadelphia: Blanchard & Lea, 1858. (pp. 579.)

3.—*Urinary Deposits; their Diagnosis, Pathology and Therapeutical Indications.* By Golding Bird, M.D., F.R.S. Edited by Edmund Lloyd Bukett, M.D., Caius Coll. Cantab., etc., etc. A new American from the fifth London Edition, with eighty Illustrations on Wood. Philadelphia: Blanchard & Lea, 1859. (pp. 382.)

4.—*Clinical Lectures on certain Diseases of the Urinary Organs and on Dropsies.* By Robert Bentley Todd, M.D., F.R.S., Physician to King's College Hospital. Philadelphia: Blanchard & Lea. (pp. 283.)

The works whose titles serve as a text for the present remarks have already received the official *Imprimatur* of medical criticism, and have been very generally recognized by the Profession as valuable exponents of the subjects embraced in their pages. We have, therefore, no intention of entering upon an analysis of their contents, for which the space at our disposal would be totally inadequate; but, we think, we may render a service equally as acceptable to many of our readers, by taking advantage of the materials so abundantly placed within our reach, in the works we have above enumerated, to ascertain how far the changes in the Urinary secretion may aid us in the diagnosis of disease. In the sketch we propose to make (we shall be compelled to trace its outlines only), we shall blend many facts and opinions, borrowed from our authors, without always stopping to point where they belong. We shall necessarily exclude many matters of interest to the chemist, devoting especial attention only to the leading points of our subject of which it is within the reach of the well informed practitioner of medicine to acquire a useful knowledge, and of which, we may add, it is his duty to know something. Thus we shall avoid all points in urinary diagnosis, whose solution requires skillful chemical manipulation or long and difficult analysis. We address ourselves only to practitioners of medicine who have not the time nor opportunities for these, but who yet endeavor to avail themselves of every means ordinarily accessible, to arrive at a correct opinion of the diseases they may be called upon to treat.

It may facilitate a clear understanding of our subject, if we group the various topics we shall have to dwell upon, somewhat arbitrarily under the leading divisions of the (1) *General* and (2) *Specific Characteristics of Urine*, as influenced by disease.

Under the 1st division we shall glance at the most noteworthy alterations which diseased condition may produce in the (*a*) quantity, (*b*) clearness, (*c*) color, (*d*) density, and (*e*) chemical reactions and changes upon cooling of urine. It must always be borne in mind, that the healthy standard in every one of these particulars is by no means fixed and stationary, but that within certain limits it is somewhat uncertain and fluctuating. Nay, further, that transient variations sometimes occur beyond the recognized limits of health in many of the general and in some of the specific characters of urine, without apparently being diagnostic of, or leaving behind any serious mischief. Their due importance in clinical experience, therefore, depends upon their associated and permanent relations to other ascertained symptoms of pathological conditions rather than upon any value they have as isolated and independent signs of disease. With this caution as to errors of interpretation, we pass to consider such facts in renal semeiology as belong to the *general characteristics of urine.*

(a) *The quantity* passed during every twenty-four hours varies considerably in different diseases. In that form of Bright's disease dependent upon the *enlarged white kidney* (so termed), less than the natural quantity is voided, but it contains a large quantity of albumen. Among the effects of the *contracted kidney*, on the contrary, is the excretion of a large quantity of urine, while its proportion of albumen is less and variable. In the advanced stages of this latter disease, a sudden diminution of the quantity of urine, and relative increase of albumen which usually ensues, are very serious symptoms of approaching dropsy, and point to a speedy and fatal termination. During the colliquative perspiration of phthisis, the secretion is diminished exceedingly. In cholera it absolutely ceases for a period. The longest time in which it was absent in this disease, occurring within the knowledge of the writer, was 60 hours. The patient subsequently recovered. Mr. Nunneley records the case of a woman who secreted no urine for 12 days.

Scanty urine attends both gastritis and nephritis. In the former case, the urine passed, though concentrated, is healthy; in the latter, it generally contains albumen.

Where, however, with other symptoms, common to both abdominal and nephritic diseases, we have complete suppression of urine, the diagnosis is exceedingly obscure. Indeed, as Dr. Barlow has shown, in obstruction of the duodenum or upper part of the small intestines, we may have no urine for three or four days, and this long-continued suppression should "incline us to look for its source rather in the intestines than in the kidneys." So, too, the same symptom may assist in the differential diagnosis of the portion of intestine in which obstruction occurs, as it is only found in connection with obstruction of the upper portions of the intestine.

In general we may safely concur with Dr. Thudicum, that

> "*The quantity of the urine is diminished in all acute febrile diseases,* viz.: in exanthemata and zymotic diseases; in low gastric fevers and typhus; in rheumatic fevers; in all inflammatory diseases, such as pneumonia, pleuritis, and bronchitis, and in the inflammatory fevers of tropical climates or miasmatic regions." (p. 28.)
>
> "A constant diminution of the quantity of urine is accompanied by, and therefore pathognomonic of, a constant increase in the intensity of the disorder. When the quantity of urine remains very low (below 25 fl. oz. per day) for any length of time, then we may conclude that the intensity of the disease has not abated. A constant increase in the quantity of the urine, however, is a favorable symptom, and shows that the patient has passed the acme, and that the diseased action is abating. During the period of convalescence the quantity of urine becomes normal, or exceeds in some cases the normal quantity." (p. 29.)

When a disease, acute or chronic, takes a fatal turn the quantity of urine becomes frequently very low, or remains in a fluctuating low state. This applies principally to those diseases which end in exhaustion of the material of the component parts of the body. Less variation is observed where death results from a more sudden interference of the nervous system, or the mechanical action of the lungs or heart.

In dropsies, with or without diseased kidneys, the urine is usually less than natural. On the other hand, the quantity is greatly increased in hydruria, polydipsia, hysteria and diabetes. In the last named, the density is also increased.

(b) *The degree of Clearness or Turbidity* of the urine may often be usefully noted. It is often very important to ascertain whether it was passed in a turbid state, or whether the turbidity supervened after its emission or after a period of rest. In some cases, phosphatic urine is discharged in a very turbid condition; so, also, urine in which much mucus or epithelium is found. As the urine cools, any quantity of the *urates* which the warm fluid held in solution is gradually deposited. It is curious that the more colored these urates are, the longer time they require for the deposit to take place. The following examples are instructive:

> "A lady having lost her child, was obliged to retain her milk in her breasts. When the painful swelling of the bosom had ceased, she discharged urine which, on touching the vessel in which it was received, became like milk, and was brought to me as milk. When only a small quantity was passed, the milk-like condition was at once apparent; the vessel withdrawing a sufficient amount of warmth from the urine to precipitate the urate. But when a larger quantity was passed, the first portion made a precipitate, which was redissolved as the larger portion was added. Ten minutes, however, were sufficient to make the precipitate appear, which consisted of snowy-white urate of ammonia."——"In a case of heart-disease, with dropsy, the brownish-red urate only fell after twenty-four hours; in a case of colic, only after twelve hours. In these three cases, the temperature could not have been the only influence exerted upon the urine, because in each case the urine must have been of the temperature of the air long before the deposit fell, and in the first case, the deposit fell before the urine was of the temperature of the (warmed) room." (Thudicum, p. 17.)

(c) *Color* "is frequently an exponent of the nature and amount of functional disturbance, and indicates to the physician the direction in which his further examination should proceed." It varies from the light greenish tint to the brownish red.

Pale urine is found in infancy, and is common in adults after the ingestion of much water or watery fluids. Its reaction is usually neutral. In chlorosis anæmia, and other similar diseased conditions, it is accompanied by a small quantity of urea and of solids generally. "Practically, the general rule holds good that *as long as* a patient secretes this description of urine, he is not affected by any severe illness of a febrile and acute nature."

Amber-colored urine is the common urine of health.

Highly colored urine ranges from a reddish-yellow to a deep red color, is decidedly acid, of high specific gravity. The amount of solids is comparatively large in consequence of the concentration which has taken place, and which may occur in the following ways:

> "1. Either the person voiding such urine has taken very little liquid, and in that case the whole amount of concentrated urine will be very small. 2. Or the water of the blood has been evaporated by the skin in the form of perspiration. 3. The third way in which a concentrated highly colored urine may be produced in healthy individuals, is by the ingestion into the blood of a large amount or an excess of nutritive nitrogenous matter. It is therefore of frequent occurrence with those who partake of sumptuous dinners, and who, like old Father Noah, 'have a dislike to water because all sinful men and beasts were drowned in it.' 4. The fourth mode of formation of this description of urine, is the more rapid disintegration of tissue and waste of matter in febrile diseases. Here the indication is the more valuable, as other symptoms, such as the temperature of the body or the state of the pulse, cannot always be exclusively relied upon as exponents of the intensity of the febrile process." (Thudicum, p. 4.)

The lemon-yellow color, sometimes met with in cholera or in spinal disease, is due to the presence of an excess of *uroxanthine*, with deficiency of urœmatine. A bluish tint, due to *cyanurine*, has been observed in cystitis and Bright's disease.

The presence of *purpurine*, indicated by a red, rosy or pink color, of any sediment of uric acid, urate of ammonia or urate of soda, is usually diagnostic of serious pathological conditions.

A *greenish-yellow* or *greenish-brown*, denotes the presence of the coloring matters of the bile.

A dingy, smoky hue shows the presence of blood — a scarlet hue reveals it in greater abundance.

As a general rule, we find the higher colors prevail in inflammatory and febrile diseases, while in anæmic and nervous disorders, the lighter tints predominate. It is usually pale in typhus fever, while in typhoid it has a bright amber color and high specific gravity. At the crises of pneumonia and some other acute diseases, a change occurs in the color, which may assist in the determination as to whether the disease is abating or not.

We must not forget that the urine may be colored by various articles of food, drugs taken into the stomach, and by substances used in inunction. We cannot do better than give the following extract from Dr. Thudicum:

> "The urine may be very deeply tinted by the coloring principle of coffee, when a tolerably strong infusion of the unadulterated roasted berry is taken, even in moderate quantity. The coloring matters of several drugs, such as the chimaphila or pyrola, hæmatoxylum, senna, rhubarb, enter the urine very readily, and a short time after having been taken into the stomach. Urine, colored by rhubarb, is sometimes mistaken for bilious urine. (G. Bird.) The error can be at once detected by the addition of liquor ammonia, which converts the dark-orange into a crimson color. Vogel recommends the addition to the urine of mineral acids in cases where the presence of the pigments of either rhubarb or senna is probable or suspected. The acids change the brownish or dark-red color into a bright yellow; while urœmatine, if changed at all, is rather darkened by their influence. *Black or blackish urine* has several times been observed after the internal use of *creosote* and the inunction of tar over the whole surface of the body." (p. 4.)

Density.—The varying proportions of the solids to the fluid in the urine of disease, deserve a more extended notice than the space at our command enables us to give at present. We can only glance at a very few points in this connection. In general, it will hold true that the amount of solids excreted would naturally become gradually less when little solid food is taken, and then it is made up in the larger proportion from the disintegration of the tissues, as in cases af inanition. "A patient lives on his own fat, partly, during his illness, as the proverb says, like a badger during the winter." The consequences are clear—emaciation. The following remarks are worthy of remembrance:

> "The fluctuations in the amount of solids occurring in both (acute and chronic diseases) are of very different prognostic value; for, in chronic disease, with a limited amount of solids, a rise in their amount is, as a general rule, a forerunner of considerable and mostly lasting improvement, and indicates that the chemistry of the body is actively employed in renewing the material of the organs and rectifying their functions. To this rule, diabetes mellitus alone forms an exception, where a rise in the amount of solids indicates an exacerbation of the disease; and in this respect, diabetes forms the transition from chronic to acute disease, in which, on the whole, a rise in the amount of solids in the urine during the acme is an unfavorable symptom, indicating an excessive disintegration of the tissues and juices of the body, which must necessarily lead to exhaustion of the material substrata of life. Under all circumstances, a constant and gradual decrease of the amount of solids is as unfavorable a symptom as a decrease of the total quantity of the urine discharged, because it indicates the decay of life and a probable fatal termination of the case." (Thudicum, p. 40.)

Dr. Golding Bird observed that in ague a remarkable relation existed "between the accession of each paroxysm and the diminished excretion of solids in the urine;" and "that *pari passu* with the patient's improvement, a gradual increase occurred in the solids excreted by the kidneys. This critical increase in the excretion of solids is true of various other diseases, especially rheumatism."

M. Morel, in his *Traite des Maladies Mentales*, places the specific gravity higher in melancholy than in mania, and in the latter than in dementia. But this diminution or increase of the solids must always be considered in its relation to the amount of the other excreta — the water accompanying them in the urine and the solids excreted by the lungs, bowels and skin. If both the solids and the water containing them are of small amount, we may conclude upon an anæmic condition of the patient. But when this obtains in diseases of the kidney, "a small amount of solids indicates the retention of urea which may probably end in uræmia. A small quantity of solids with a large amount of water, may result from excess of drink of some kind; such is the character of the urine in many cases of hysteria and hypochondriasis. This constitutes hydruria. When this condition obtains, in many cases of dropsy and hydræmia, it usually marks a decided improvement of the patient. In diseases with a small amount of urine of high specific gravity, wherein the solids are proportionally larger than the amount of water, but still below the natural quantity, the acuteness of the pathological process is clearly indicated. "Beginning with the physiological excessive perspiration, there are many pathological conditions, as the sweat of fever, thirst, starvation, diarrhœa, and fever of essential or symptomatic nature, of which this condition of urine is a regular symptom." There remains still another class of diseases in which both the solids and water of the urine are largely in excess. In diabetes mellitus and insipidus this obtains, especially in the former.

Respecting the conclusions which might be derived from a comparison of the amount of solids excreted by the kidneys with the excreta of the lungs, skin and bowels, we can say but little, as thorough and careful investigations upon these points are yet wanting. Dr. Thudicum has brought together a few well ascertained facts which throw a little light upon this subject.

> "In many cases of dropsy the bowels will spontaneously compensate partly for a diminished discharge of urine; and it is, in fact, by this vicarious discharge, that drastic purgatives are of service in disease of the kidneys. The skin will eliminate urea in cholera in such quantities that it may be collected by washing and crystallization, and its amount may even be determined. The lungs will, perhaps, in many cases take on increased action and discharge not only water, but also carbonic acid, to compensate for a diminished secretion by the kidneys and the skin. A diminution in the amount of solids in the urine requires, therefore, to be checked by the amount of vicarious discharges. And should we be able to determine at the same time the amount of the ingested nutritive matters, we should at once be in a position to balance the income and expenditure of the body, and thereby not only to foresee the probable result, but also to be in possession of the indication for part of our treatment." (p. 42.)

(e) *The chemical reaction of urine* is easily determined, and is often of importance. As it is usually slightly acid, unless this acidity is excessive, as in some cases of uric acid deposit, it is not of very great importance, nor need it excite much attention. Sometimes urine, however, which was acid when discharged, becomes alkaline in a very short time. Dr. Bird says that this conversion is sometimes effected within an hour after emission. This must be regarded as a morbid feature, "because normal urine, though it almost always becomes alkaline during its decomposition, yet does not do so within the first twenty-four hours after its emission." This must not be confounded with the alkalinity produced by a small portion of old urine carelessly left in the vessels into which the fresh urine is poured, and which serves as a ferment for the whole quantity. When we find that the urine is alkaline when discharged, it becomes important to ascertain whether this condition arises from fixed or volatile alkalies. If from the former, we may expect to find some general disturbance connected with the digestive functions, and in some cases calculous disease. The latter results from the generation of ammonia by the decomposition of urea from the presence of decomposing pus or mucus in the bladder, and denotes some more local and specific trouble involving that viscus. The rapidity with which this takes place after certain injuries of the spine, whereby more or less complete paralysis of the bladder ensues, is familiar to all. The same may occur without any paralysis of the bladder in those cases of retention of urine for a great length of time within the bladder, which the want of conveniences so often entails upon operatives, or which may arise as a mere habit, and be so perpetuated until an apparent incontinence of urine results. Dr. Morland quotes a case well worthy of remembrance as to the importance of a correct diagnosis of this species of *enuresis:*

> "It is a symptom of *retention* in once sense: for when the bladder has become greatly distended, the resistance of the sphincter vesica is finally overcome, and the urine dribbles away with more or less rapidity. In a case related by Mr.

Lawrence, the discharge in this manner was so continuous and copious, that the existing retention was overlooked until Mr. L., on examination, discovered the superior margin of the vesical tumor far above the umbilicus, and the catheter drew off five pints of urine. The case had been mistaken by the previous attendant for one of *extremely irritable bladder;* he had given diluents and allowed the distention to go on for five days; the dribbling of urine being considered by him an evidence of the supposed irritability of the organ, and '*that it would hold no water at all.*' The importance of accurate diagnosis in these cases is too evident to be insisted upon. The result of the error in the above instance was permanent loss of the expulsive power and the constant need of the catheter, which the patient himself learned to use." (Morland, p. 113.)

Alkalescence of the urine, resulting from a somewhat similar retention of the secretion, is frequently met with among the insane. In some cases when forced to pass water either by necessity or by attendants, they only allow the passage of a part, retaining another, which remains as a ferment for the conversion of urea into ammonia. As might be expected, this occurs principally in dementia and melancholy. Thus, Drs. Sutherland and Rigby found the urine "capable of effervescing on the addition of acetic acid in 34 per cent. of cases of dementia, 30 per cent. of melancholy, and 16 per cent. of mania." They seem to think it due to the cerebral lesion, independent of any obvious spinal mischief, but we cannot help thinking, from repeated observations, that it is more often due to the train of events we have already indicated. In that condition of the viscus known as *sacculated bladder*, the same effect is apt to occur from the difficulty of completely voiding the contents.

It is occasionally well to bear in mind, that when the urine is alkaline, it is somewhat difficult to detect the presence of albumen in small quantities. So, too, it may mark to some extent the quantity of uric acid held in solution in the fluid instead of the deposition of that substance which takes place when the reaction is acid. In rheumatism the urine becomes exceedingly acid, and in the treatment of that disease, it is often observed that the cessation of pain is coincident with the production of alkaline urine.

From these more *general* characteristics we turn to the variations induced by disease in the more *specific qualities*, the various normal constituents of the urine, or the morbid products which may have been added as a pathological consequence. For convenience sake we shall adopt an arbitrary arrangement, founded upon no scientific basis whatever, but simply recommended by the readiness with which it can be carried out in practice from its foundation upon appearances easily cognizable to the naked eye. While, after standing a greater or less time, the specimen deposits a sediment, generally speaking it will be sufficient to ascertain the true character of the deposit. In some cases, however, the results of an examination of the deposit are insufficient for our purpose, or we seek special information respecting substances still held in solution. Thus we have at once two groups, viz.:

1. Substances forming deposits.

2. Substances soluable in urine—and these will be still further subdivided as follows:

1. *Substances forming deposits.* (f) Opaque, dense deposits (often bulky), sinking to the bottom of the vessel. (g) Semilucent, flocculent, cloudy deposits, occupying considerable volume, easily diffused throughout the fluid. (h) Crystalline substances, small in bulk, deposited on sides or bottom of vessel.

2. *Substances soluble in urine.* (i) Normal constituents in abnormal quantities. (k) Abnormal substances foreign to urine.

Of course it is understood that often, perhaps in a majority of cases, more than one deposit is present, and examples of all the constituents included in the above divisions might almost be found in a single specimen of urine.

(f) *Opaque, dense deposits* (*often bulky*), *sinking to the bottom of the vessel*, and easily separable from the supernatant fluid. They are frequently of considerable quantity. Prominent in this class are the various compounds of Uric

Acid—the acid itself when alone as a deposit occupying another division, since it is then found in minute quantities. We shall however consider all varieties of *lithic* or *uric acid* deposits in the same place for the sake of convenience. The *urates* form an abundant deposit in many acute diseases. The quantity deposited may not depend altogether upon disease, but also upon the condition of the urine itself. If it should be alkaline, more of the *urates* will be held in solution and less be thrown down; if neutral or acid, they will be abundantly precipitated, and if any free acid be present, uric acid will be more or less separated and deposited in its own crystalline forms. Moreover, any decrease in the amount of water in the urine, will cause a deposit of urates due entirely to the deficiency of water for their solution. In cases therefore where the whole quantity of urine passed during the twenty-four hours is diminished, and a precipitate of urates occurs, sufficient water should be added to bring the quantity of urine up to the proper standard, and if at the ordinary temperature urates remain as a precipitate, an excess is present. It must also be remembered that a life of inaction of itself increases the amount of *uric acid*—the opposite of urea in this respect. Thus Hammond, U. S. A., found that by increased exercise uric acid diminished from 13.72 grs. to 8.21 grs. in the twenty-four hours, and increased during inaction to 24.86 grs.

The most frequent form of uric acid is the *urate of ammonia*, which occurs in the urine stained by various colors, from light yellow to reddish brown. Under the microscope it consists of amorphous granules. It dissolves by application of heat, and on the addition of any mineral acid, sets free the uric acid from its combination with ammonia. In most acute febrile diseases, this deposit appears. A copious deposit of urates of ammonia is often *critical* in rheumatism; in intermittent fever, the color varying very much. It does not invariably accompany inflammatory action or vascular disturbances. Andral reports 33 cases of pneumonia, in 17 of which it occurred as a deposit. The lighter colored varieties appear to be less grave in their signification than the darker. These, while they occur in a great variety of disease, and therefore indicate no special lesion with which they can be identified, are more constantly associated with those diseases in which *gastric derangements* play a prominent part. Emaciation is often observed in connection with this deposit. Those tinged with pinkish red we shall afterwards allude to. The repressed action of the skin also increases the quantity of urate of ammonia. This may and does occur in many stages of most diseases.

In pneumonia the appearance of the lithates in the urine may be regarded as *critical*, and marks the period of excretion of the morbid products. This usually takes place about the 14th day, and is decidedly favorable for the prognosis.

Urate of soda is less frequently found than the preceding. In gout, and rheumatic gout, however, it plays an important part. Its presence in excess in the blood in these diseases has been demonstrated. It forms the well known deposits on the cartilage of the external ear, and in the joints of persons affected with gout. In many instances the cartilage cells themselves being the focus of the individual deposits. In the urine the amount of uric acid (the larger portion being urate of soda) is diminished at the access of acute gout, but towards the close of a paroxysm it is passed in much larger quantities. When the fit has ended, the amount of uric acid is again lessened, though not so much as during the first days of the paroxysm. In chronic gout, the elimination of uric acid is quite feeble, and the fact is worthy of remembrance, that after an attack of gout, or during the intermissions of the paroxysms, this power of eliminating the acid is never restored to the same degree that existed before gout invaded the system.

A copious deposit of uric acid *crystals* constitutes what is termed gravel. They are in fact oftentimes minute calculi, and are formed of many agglomerated crystals of the acid. They are often the precursors of uric acid calculus, the form most frequently met with. Of 374 calculi examined by Bird, the nuclei of 269 were composed of uric acid, or urate of ammonia alone. A patient recently consulted the writer complaining of occasional pain on micturition. He passed small bright red crystalline bodies, quite visible to the naked eye. Under the microscope they looked like rocks, formed as they were by the accretion of the crystals. Much pain is thus occasioned to the patient, and much anxiety is necessarily felt lest a " greater evil befall." Uric acid is often found in urine some hours after its passage, when no traces of it could be observed at the time it was passed. This is due to the acid fermentation which takes place and sets free the uric acid from its combinations. This is of course of less pathological importance than in the circumstances we have adverted to. In the milder examples of scarlet fever, crystals of uric acid are eliminated, and when the irritation of the kidneys has been severe, they appear as the graver symptoms recede. Their appearance is therefore rather favorable than otherwise. One practical observation by Dr. Thudicum as to the treatment the presence of urates would indicate is worthy of remembrance:

> " *The individual whose urine has deposited the urates, does not drink water enough and must drink more, and must drink so much that the urine at the ordinary temperature of the air shall remain clear.* Of course, in some cases this will be neither possible nor advisable ; but in most cases of acute and febrile disease, it should be a plan of treatment. I have certainly seen it attended by beneficial results in many cases ; I have also observed the contrary—want of water in the system to be a source of disease." (p. 100.)

Phosphates, in the form of earthy phosphates and triple phosphates, give to the urine an appearance of turbidity when it is passed. The earthy phosphates are sometimes mistaken for a slight deposit of albumen, but a drop of almost any acid will dissipate this notion. The persistent excess of earthy phosphates is usually indicative of serious trouble. Dr. Thudicum thus expresses the pathological law of these deposits:

> "1. The presence of earthy phosphates in the urine is indicative of the alkaline condition of that fluid."
>
> "2. If the precipitate of earthy phosphates is entirely amorphous, we may conclude that the alkali which formed it was not ammonia.
>
> "3. If, however, the precipitate contains crystals of triple phosphate, it indicates the presence of ammonia, arising most probably from the decomposition of urea." (p. 210.)

This does not accord with the conclusions of Dr. G. Bird, who distinctly states that the deposits are found in acid or neutral urine. The source of this fallacy we cannot stay to explain. We only remark that ample opportunities of testing the matter have persuaded us of the truth of Dr. Thudicum's conclusions quoted above. The clinical importance of these deposits consists in the amount of exhaustion of nervous energy they indicate, either generally or locally. It may be broadly stated that the calcareous deposit presents "more marked evidence of exhaustion and of the previous existence of some drain on the nervous system, than when the triple salt alone existed; unless when its source is strictly local." (G. Bird, p. 278.) The earthy phosphates are greatly increased in acute inflammation of the brain, but are diminished in delirium tremens. In acute mania the great excess of the phosphates denotes the expenditure of nervous force. In dementia and chronic mania they are diminished, yet there is often an apparent increase of them, as the precipitation of triple phosphates, which so often is found in these diseases and which is due to the ammonia generated in the bladder in the manner already alluded to, throws down all the phosphates usually held in solution. In a number of cases phosphatic urine is accompanied by a large excess of water and a tendency to very early decomposition. The large amount of urine thus passed, has sometimes been mistaken for the result of diabetes. Phosphatic urine caused by the presence of a calculus or of organic disease gives a permanent deposit, and does not vary from the time of discharge—that arising from nervous irritation is usually emitted in the evening; the morning urine being more clear, and showing more evidence of the urates. Triple phosphates may be deposited after mental toil and worry. They are always then associated with dyspeptic symptoms. They are abundant in dysmenorrhœa, in severe cases of retroflexion of the uterus, and indeed all forms of phosphates are to be met with in the urine of most females affected with well-marked uterine disease. This is partly, if not wholly due to the mental anxiety which usually accompanies these disorders, and the irritability of the bladder which so often cöexists. Triple phosphates are also abundantly formed in melancholy and dementia, the urine in these cases being somewhat fœtid. We have already drawn attention to the connection of alkaline urine with paralysis of the bladder, arising from injury of the spine—from long habits of retention, and with any cause whereby the urine is not completely voided at reasonable intervals. In all the cases, ammonia being set free, the deposition of phosphates, and especially of the triple salt, necessarily occurs. The diagnostic and pathological importance of these signs is too obvious to need further comment. We pass to a practical hint respecting the treatment of diseases wherein phosphates are an important element, viz., the necessity of a full *meat* diet and the avoidance of an exclusive or predominating vegetable or fruit diet. The former, it is well known, rendering the urine acid; the latter causing its reaction to be alkaline.

Blood in the urine evidences a disturbance of health of no trifling import. It imparts to the urine a characteristic appearance, depending upon the quantity effused and the condition of the urine when examined. If the urine be *acid*, a scarlet appearance, if alkaline, a smoky brownish color is given to the fluid. The blood globules gravitate to the bottom of the vessel, forming a brownish-red granular sediment. The presence of albumen is of course to be readily detected by its appropriate tests, and the blood globules themselves are easily recognized under the microscope. If they have been long mixed, they will have become irregular and ragged in their outline, and their surfaces assume a granular aspect.

The presence of blood in the urine gave rise to the name of *Hœmaturia* thus characterizing, as a disease, what is in reality no disease at all, but the symptom of various diseases, depending on essentially different and even opposite pathological conditions.

Whence comes the blood? Wherefore does it flow? These are the points to be investigated. The sources of hemorrhage may be (in females) the uterus—a very common source, but easily detected and, therefore, may be dismissed without any further inquiry concerning its importance. The three principal sources of the hemorrhage are (1) the kidney, (2) the bladder, and (3) the neck of the bladder. To distinguish these sources with certainty is oftentimes exceedingly difficult; sometimes it is attended with but little trouble. When the kidney is the source of the hemorrhage, the blood is generally evenly diffused throughout the fluid, whether it is poured out from the malpighian bodies simultaneously with the watery elements of the urine, or whether it is mixed by the urine passing over an abraded surface in its passage to the bladder. Though generally it is free from clots, and always from large clots, there are sometimes small casts of *coagulated blood* of the renal tubes in which it was effused. These casts have usually more or less renal epithelium entangled with them. When blood has been effused from the kidneys, there are generally found interspersed throughout the fluid numerous corpuscles of epithelium, which are easily distinguished from those which come from the bladder.

On the other hand, when the bladder is the seat of the trouble, besides the general symptoms of pain, on pressure —before or after passing water—of frequency or difficulty of micturition, the blood is not usually diffused throughout the fluid; it is apt to form clots in the bladder, which may impede micturition. Often the mode of passing the secretion, may help to indicate its source. In evacuating the bladder, the urine comes away at first, either of its natural color, or very slightly reddened, but the last portion of it is deeply colored and often seems to consist solely of blood; sometimes pure blood, either liquid or in clots, or in both forms, comes away at the end of the micturition. When the blood has been effused from the neck of the bladder, the microscope will reveal very numerous epithelial cells mixed with it, nearly all being of the columnar variety. The blood is apt, also, to pass sometimes a little after the urine, as well as to be mixed with it, and is fresher in color and quality.

We have now noticed the chief sources of the blood. It remains to indicate the pathological condition which caused its flow. Among these we find *calculus* in the kidney, which, accompanied by severe paroxysms of pain, causes *pyelitis*, or inflammation of the pelvis, and infundibula of kidney. It is easy to conceive how, from this constant local irritation, the mucous surfaces become abraded and the hemorrhage ensues. *Hyperœmia* of the kidney is a more frequent agent, and itself depends upon a variety of causes. Thus it may depend, or at least operate, upon the kidney alone or primarily. Thus *nephritis*, from exposure to cold and wet, may attract blood to the capillary vessels, distending their weak walls to such an extent as to burst them at some point, and thus cause an escape of blood. But by far the more frequent cause is found in the local irritation of some poison in the blood, which is in the course of elimination by the kidneys. In this way turpentine and cantharides occasionally produce hemorrhage, and thus the rheumatic poison, the *materies morbi* of gout, of scarlet fever and typhus fever, are especially productive of this condition of affairs. In scarlet fever, when the stage of desquamation begins, a pathological state is set up in the kidney highly favorable to hæmaturia. Desquamation of the epithelial lining occurs in the renal tubes in a manner somewhat analogous to that of the skin. The power of resistance of the capillaries is therefore diminished. Moreover, the morbific matter in the blood, passing out of the body through this channel, in a great measure undoubtedly causes an afflux of blood to this part by the power of irritation it appears to exercise upon the kidneys. Any cause, therefore, at this crisis which may increase the latter force (the hyperæmia) above the power of resistance possessed by the enfeebled walls will naturally give rise to a rupture of the vessels more or less extensive. Thus, blood may often be seen in the urine of scarlet fever somewhere about the tenth day, or the usual time for derangements of the renal secretions to occur. It may only afford a slight trace of blood which disappears in a day or two. At other times it may be effused in large quantities and become persistent, and at other times, may be complicated with extensive dropsy. In the same way transient albuminuria may exist after scarlet fever, by infiltration through the attenuated walls of the capillaries, when those vessels, in an extreme state of tension, have not yet been ruptured. There is also another mode of operation which a blood poison may select. It may by its prolonged presence so impoverish the blood itself in the part, as to interfere with the nutrition of the parts that blood was designed to nourish. Thus the capillary walls and epithelial cells are deprived of their accustomed supplies to sustain them in their work, and the work of reparation is imperfectly carried on. Thus passive congestion takes place. The weakened walls give way to a pressure which, perhaps, is not abnormal. In the one case the *force* of the enlarged quantity of blood overcomes a comparatively healthy resistance and causes a rupture; in the latter case, the weakened condition of the walls themselves is the cause of their overthrow. When this latter case occurs in scarlet fever, the force of the poison has already overwhelmed (so to speak) the system of the patient, and unless very prompt measures are taken, he may, even in spite of the most vigorous and stimulant treatment, sink rapidly. It is truly surprising how rapidly death takes place under these circumstances. The elimination of the poison has not been *pari passu* with its generation, and the accumulation soon reaches the point which carries every thing before it. Of course any blood poison which by preference is eliminated by the kidneys, may produce hæmaturia by either of these modes. Scarlet fever more usually takes on the former mode of action and produces acute hyperæmia. Rheumatic fever may act in a similar way, perhaps even more strikingly as a local irritant from the great excretion of urates. Typhus fever more often selects the last mode of procedure. *Purpura hæmmorrhagica* doubtless acts in this way, involving the mucous surfaces of bladder and kidney. Occasionally hæmaturia is witnessed from this cause in typhoid fever, greatly exaggerating the unfavorable prognosis. Dr. Morland says:

> "We had not long since a young and stalwart Irish laborer under our care with typhoid fever, who exhibited this unpromising symptom. This case, hopeful until then, grew momentarily aggravated. Catheterism was required and very large quantities of urine, almost black with effused blood, were drawn off. No *post-mortem* examination was allowed. The grave typhoidal condition sufficiently accounted for the bleeding." (Morland, p. 75.)

In addition to these forms of renal disease, there may exist inflammatory attacks, with a pyeiform tendency in the parenchyma of the organ. Before the puriform matter is excreted, or when it first appears, blood will often be discharged. This form of hemorrhage, however, rarely comes to notice, unless pus is discharged, or until after the stage at which blood alone is effused.

Malignant disease of the kidney may by ulceration produce hæmaturia. Its diagnosis will rather depend upon the general symptoms than upon any evidence derived from the urine, unless in the latter stages, when encephaloid material may be voided in sufficient quantity for recognition under the microscope. But this recognition is exceedingly rare. In Dr. Todd's lectures, p. 57, is an interesting history of a case of hæmaturia from cancer of the kidney. The bleeding recurred several times, but neither at these times nor during the intermissions were there any evidences of the disease derived from the careful investigation of the urine. The diagnosis was fully established from the increasing tumor and general symptoms. Hæmaturia dependent upon the bladder for its origin may be due to *cystitis* from various causes, constitutional or local. Gout being the principal example of the former, and calculus of the latter. Certain medicines which act as irritants produce the same results.

"A second cause of cystic hæmaturia is the retention of the urine in the bladder, and the generation of carbonate of ammonia by the decomposition of the urea, which is its principal organic constituent. Such retention may arise from a stricture of the urethra, which does not allow the bladder to be ever completely evacuated by the natural expulsive effort. But it more frequently comes under the observation of the physician as the result of paralysis of the bladder, due, in the great majority of instances, to disease of the spinal cord, which likewise causes more or less of paraplegia. It may be laid down as a general rule that in this form of cystic hæmaturia the urine contains more or less of mucopurulent matter, assuming when this secretion is alkaline, the peculiar viscid character which has long been known among practical writers as '*ropy mucus*.' This name, though you will find it adopted by high authorities is nevertheless an incorrect one. The substance in question is not *mucus*, it is *pus*, altered by the presence of an alkali—altered as you often see it when in the wards we test for its presence by liquor potassæ. Under the influence of this agent or of ammonia the liquid pus becomes viscid, stringy or ropy, just like the white or albumen of an egg. The reaction is probably due to the presence of oily matter in the pus, which, uniting with the alkali, forms a soap." (Todd, p. 62.)

The third form of cystic hæmaturia depends upon the presence of a fungoid growth from the mucous membrane of the bladder. Blood in the urine is often the first symptom of this disease. Subsequent pain and irritation give rise to suspicion of stone. Dr. Todd gives two cases of malignant disease of bladder in which hæmaturia was a prominent symptom, and in one of which a calculus was suspected and searched for. Mr. Crosse, of Norwich, related a case where he operated for stone in the bladder, all the symptoms of which, including hemorrhage, were simulated by the fungus which existed. Where so eminent an authority on these subjects has failed, no special rule for the formation of a diagnosis can be laid down with precision.

Lastly, bloody urine results from those little excrescences or sanguineous warts occasionally found on the "meatus urinarius" of females, and which are so productive of pain and distress. When a patient complains of excruciating pain at and immediately after the voiding of her urine, this grave disease may very well be suspected. A correct diagnosis is of essential importance in these cases, from the comparative relief afforded by remedies when the disease has been discovered. We must not omit to notice the prostate gland as a source of hemorrhage, sometimes quite profuse. Most frequently this results from instrumental interference and irritation. Dr. Morland alludes to *vesical varix*, a disease of the bladder, confessedly very rare, and even regarded as apocryphal by as great an authority as Civiale, of which he states one of the chief symptoms to be *hæmaturia.* The diagnosis is exceedingly uncertain, but he remarks, "if there be hemorrhoids or varicose veins elsewhere, the above symptoms (hæmaturia, dysuria, and ischuria), would lead us to suspect their existence in the bladder." (p. 106.)

Pus is almost uniformly preceded by blood. This may, however, escape detection. Pus is usually so marked and in sufficient quantities as to attract attention. It may come from the kidneys or bladder. Dr. Todd thus classifies the cases most likely to come before us:

> 1. "Cases of affection of the bladder in which the pus is secreted by its mucous membrane, as in simple cystitis, or in that caused by retained urine, or by the presence of a stone, or by some constitutional cause, as gout."
>
> 2. "Cases in which the pus is secreted by the mucous membrane of the pelvis and infundibula of the kidney—cases of pyelitis."
>
> 3. "Cases in which the pus comes from the substance of the kidney itself, in consequence of the existence of abscess. To these may be added cases in which pus comes from the ureter; but this is an affection seldom isolated from pyelitis, or from inflammation of the mucous membrane of the bladder." (Todd, p. 261.)

Suppurative nephritis is a result of non-desquamative nephritis in its chronic stages, and commences with small casts containing pus corpuscles. When the basement membrane has become destroyed casts are no longer framed, but the pus is poured out in its pure state. Pus may come from the bladder in consequence of lithotrity, from the urethra from gonorrhœa, and in females from leucorrhœa, or from pelvic abscess discharging *per vaginam.* Both of these cases occasionally prove sources of error as to deductions from the presence of pus in urine, and should always be borne in mind. They sometimes lead a careless observer to suspect albuminuria. The point to be made out as to the origin of the pus is, whether it comes from the kidneys or bladder. On this subject we quote from Dr. Morland:

> "In distinguishing between suppurative nephritis and cases in which the bladder furnishes the pus, we rely both upon microscopic investigation and general constitutional signs. The phosphatic diathesis is commonly present when vesical disease exists. The triple phosphate is found in abundance in the urine, and no tube casts are seen in the purulent matter. Renal disease, however, may accompany the phosphatic diathesis. If the urine be free from albumen, or only slightly coagulable by reason of the purulent secretion from the bladder, we may conclude that the kidneys are unaffected. If very albuminous, abnormal as to quantity, of low specific gravity, dropsy existing, renal disease is to be feared.

Efforts to correct the alkaline condition of the urine and to remove the phosphatic deposit, would, if successful, confirm us in supposing the non-existence of suppuration in the kidneys, and put us upon the right track for treatment. Suppurative, renal and vesical disease do not very frequently coexist." (Morland, p. 58.)

Before passing from the consideration of pus, it may not be uninteresting to advert to the fact that the last days of Golding Bird were embittered by the presence of this symptom.

"In addition to acute rheumatism and valvular disease of the heart, jaundice and irritable stomach, he had pyelitis and calculus. There had been anasarca of the feet and face; and about fourteen days before death, the urine suddenly decreased in quantity and became mixed with blood. There was much pain at the neck of the bladder. Ultimately the urine was highly charged with pus; at times it seemed almost wholly pus." "Dr. Bird's case adds another to the list of distinguished medical men who have fallen victims to the very diseases, the knowledge of which they did so much to advance. Lænnec died of phthisis; Corvisart of disease of the heart, etc., etc." (Morland, p. 62, note.)

Chylous urine, rarely met with in temperate climates, is found more frequently among the tropics. It is evidently dependent upon some grave disorder of assimilation. To the eye, it has a milky appearance, and spontaneously coagulates to a tremulous jelly. This is, however, not constantly so, but it sometimes subsides, forming a dense layer of deposit. It is composed of blood corpuscles, fibrin-albumen and albuminoid matter, together with more or less fatty substances. The prognosis is very unfavorable. Dr. Thudicum notices a case under the care of Dr. Bence Jones, of St. George's Hospital, London, whose observations upon this subject, and a paper by Dr. Beale, of London, illustrated by other cases, constitute the most reliable authorities upon this interesting disease. It is to be hoped that the increased clinical experience of the physicians resident in the countries where this disease is more frequently met with, may, before long, be rendered subservient to the increase of our knowledge respecting its symptoms and pathology.

(*To be continued.*)

CUBA FOR INVALIDS.

Cuba for Invalids. By R. W. Gibbes, M.D., of Columbia, S. C. New York: W. A. Townsend & Co., 1860. (pp. 214.)

This is a pleasant little volume, consisting mainly of accounts of what Dr. Gibbes saw in journeying from one port of Cuba to another, whither he went for the effects of change of climate, diet, etc., upon his own person.

Dr. Gibbes was affected with chronic pleurisy, attended with effusion, and receiving marked benefit from his trip determined to publish the fact, and the knowledge which he acquired of the country, that others may be encouraged to seek the same change with more information concerning routes, modes of travel, accommodations, etc., than has hitherto existed, at least among the people of the interior States, concerning the "Faithful Isle." The doctor found, as every one else will find, that the climate of the northern coast is not fit in winter for invalids, especially those suffering from pulmonary complaints, and guided by the advice of a gentleman long resident in Havana, went to Trinidad on the southern coast, where he found what he desired, a warm equable temperature, in an agreeable country where the comforts of life seem not to be lacking. Here he soon recovered so far as to be able to visit several other towns and places of interest, which he describes in a very lively and readable style. Either from his position or his introductions, he met with few or none of those difficulties which are often the annoyance of travelers less favored. He seems to have received marked attention from many gentlemen of high standing and wealth, and was not obliged to abide constantly during his visit in hotels with his own thoughts or strangers speaking a strange language for companions, afraid to speak or to venture out lest he might not be able to make his wishes and movements intelligible.

Dr. Gibbes thus sums up the objections to the climate of Havana for invalids from the north, and these objections may be regarded as true of all points on the northern coast, except, perhaps, a few places towards the eastern end of the island Xibara, etc., which have a better climate than Havana, Matanzas or Cardenas, but are difficult of access, owing to infrequency of direct communication. "The climate of Havana is not suitable for invalids from the north. In addition to the numerous causes of excitement in that gay city, the northers are very distressing to the lungs, and the charge of $4.00 per day to the pocket. Persons in ill-health should seek the country air, and on the south side of the island, the northers are not felt. The difficulty of procuring accommodations is great. At San Antonio the hotel is closed, at Cardenas tolerable, at Sagua la Grande there is no hotel." Almost all the smaller towns are poor, and not in what we would deem suitable condition as places of even temporary residence. Many of them are beautifully situated, and from the sea present a most inviting appearance, but when closely approached are found to be unclean and, in many instances, unhealthy from the prevalence of miasmatic fevers, both in winter and summer.

Besides the difficulties mentioned by Dr. Gibbes, there are every where, except in the larger towns, others arising from want of familiarity on the part of the people with the customs of strangers. Among the common people, in fact, among all except the most wealthy, ideas of comfort and convenience are at a low ebb. Their houses are poor, beds are poor, and not unfrequently populated with the national insect; while the cookery, with the exception of bread and coffee, is detestable from the habit of flavoring nearly every dish with garlic, red pepper and onions, and it is a difficult matter, even by special request, to obtain any thing in the shape of meat without one or the other, for it is hard to make any Cuban believe that his nation and national customs are not superior to all other nations and customs of the earth, and he will laugh in one's face or show offense if the attempt is made to convince him to the contrary. As was the Spaniard in the days of Cervantes, so is he now, and so will he remain.

Apart from the modes of cooking, meats are generally very inferior in all parts of the island. Beef, mutton and goat's-flesh are in many localities sufficiently abundant but poor in quality, and butter from New York and Ohio is the best that can be obtained. Milk, except among herdsmen, is not much used, and generally is of dubious character, still it may be obtained by special effort. One, however, hardly notices the inferiority or deprivation of the articles mentioned when well supplied with fruit, nice fowls, eggs, and the finest fish in the world; all these are generally abundant and, except in Havana and the larger towns, sufficiently cheap. Nor must we forget turtle, which in Cuba as at Key West, is often seen in its highest perfection, and those who like it may have daily, at a trifling cost, turtle soup, turtle steak, calipee and calipash, seasoned at the proper time with turtle's-egg sauce and conch chowder. Very few persons, however, retain relish for this article of food longer than a few weeks; it is too rich and cloying; so much so that, after having eaten it a few days, it is usually regarded with aversion, and we think no better punishment could be devised for a refractory alderman than to confine him for a month exclusively to a turtle diet; if he did not die he surely would reform.

The lighter and cheaper kinds of Spanish and French wines are every where abundant, and obtainable at more reasonable rates than in the United States. The roads in the interior are generally bad, though leading through fine scenery, and carriages, except ox-carts, scarce. The usual mode of conveyance is the saddle, which is pleasant enough for those who have strength, for the horses, though small, are well-gaited and excellent animals, and the Spanish mule needs no praise. The healthy traveler feels none of the in-conveniences mentioned, and often the invalid, if he knows what he has to expect, will soon forget them amid novel scenes and associations. It is well, however, to remember that they exist.

Dr. Gibbes, at page 56, gives a summary of some meteorological observations by Dr. Urquiola, extending through a series of years, which prove the climate of Trinidad de Cuba to be singularly equable and mild, and in consequence, a desirable place of residence for invalids for whom exercise in the open air is necessary. According to these observations, the mean heat at Trinidad during a period of thirteen years, was 80.1° F., the maximum 92° F., and the minimum 56° F., to which point the mercury fell only once during the whole period. The mean heat at sunrise is stated to be 77.1° F., at 2½ o'clock P.M. 83.2° F. The winds are not violent, hurricanes, always rare in Cuba, having, it seems, gone entirely out of fashion of late years, but there is almost always a breeze, generally from the S.--S.W. or N.E., and there is generally less rain in the winter than in other seasons, which, when taken with the lower though sufficient temperature, renders the climate still more desirable for invalids from the north who cannot remain during the summer months.

Dr. Gibbes describes the scenery in the neighborhood as being superb and worth visiting. To us of the flat West the scenery of all parts of the island would appear grand and alone serve to amuse for a month.

Could it be reached with the same facility, we should recommend the invalid to seek Santiago de Cuba instead of Trinidad. The mean temperature is greater and there is perhaps more rain, but in winter the climate is equally salubrious, while the town is older, and, with its deep land-locked bay, is certainly more agreeable, and it is surrounded by a country which is as beautiful as any on the globe, yielding in profusion all the fruits of the tropics which we are wont to consider delicacies, and many with which the traveler, who only visits the northern portion of the island, does not become familiar nor even see. Many of the people are wealthy and kind, and when one grows tired of the town, the coast, sailing, and angling, if he is fortunate in the possession of a few letters, a pleasant ride (if he is able to sit in the saddle) takes him to the mountains, amid the coffee plantations, to enjoy a comparatively bracing air, shooting, and the grand scenery for which the eastern end of the island is especially noted.

Dr. Gibbes did not visit the Bahamas, as he wished to do, but he quotes a letter from a friend which contains much information concerning those islands, and particularly of Nassau, the chief town, which lately has been sought by many invalids during winter. The following is an apt description of the appearance of the little islands comprising the group, at least such of them as are passed on the way from Havana to Nassau:

> "As island after island presented itself to our view, we were filled with admiration at their gem-like appearance, covered with a never-fading verdure peculiar to the Tropics, and surrounded by the most placid of seas, they looked more like 'floating gardens' than aught else I can compare them to; indeed, it required but a very little stretch of imagination to suppose that they were expressly designed as a charming retreat for the goddess Venus herself. We were never tired of gazing at them, and could not but picture to our minds what emotions of delight their discovery must have produced in the hearts of the illustrious Genoese and his intrepid crew."

It is said on good authority that there are in Exuma Sound, through which the writer of the above must have sailed, as it is in the route he took from Havana to Nassau, something over four hundred of these "floating gardens," which, at a distance, as represented, are exceedingly beau tiful — "beautiful as a dream," but as delusive, for they are mostly barren, without springs, and but few of them inhabited, except by mocking-birds and pigeons, which last afford fine shooting when they can be reached, which frequently is not the case, so thick is the chapparal and so rough the rocks.

Even Eleuthera, the best island of the group, to an American, presents, with the exception of a very few cultivated spots, a sterile and forbidding aspect. It has but little elevation, and is composed of rocks heaped upon rocks, sparsely covered with a growth of stunted trees and bushes, having no streams and but few springs; while all around, even in the widest parts of the island, the melancholy roar of the breakers can be heard morning, noon and night, suggesting shipwrecks, Robinson Crusoe, and Tennyson's

"Break, break, break,
On thy cold gray stones, oh sea!"

but nothing more inspiriting.

The following is a pleasant, and, in the main, correct sketch of the general appearance of Nassau:

> "It wanted a little over one hour of sunset; it had been raining, but the squall had passed off, leaving in the western sky a few dark clouds, through which the sun's rays had successfully struggled to light up the town and country with shades and tints the most brilliant we had ever beheld. As we drew nearer, we perceived that Nassau is built upon the side of a hill, rising several hundred feet [about one hundred] above the level of the sea, to which it fronts." . . . . "We had been particularly struck, during our cruise, with the extraordinarily translucent state of the water around these islands; as we moved up the harbor of Nassau, we distinctly saw beautiful colored fishes playing at hide-and-seek among the mimic forests of coral, several fathoms below the surface." . . . . . "We were put on shore at the government wharf, and having stopped a moment to admire, *en passant*, the plain but commodious public buildings, all proceeded to the 'Royal Victoria Hotel,' where an excellent supper was soon got ready for us. Being somewhat fatigued, we retired early to our rooms, which were unusually large and airy, comfortably furnished, and, to our intense satisfaction, instead of a wretched Spanish 'catre,' which poor C. had found so hard to get accustomed to at Havana, we enjoyed the luxury of a clean, wholesome, four-foot English bedstead, with mattress, etc., all complete." . . . . . "The houses of Nassau, with the exception, unfortunately, of a few in the front streets, are kept scrupulously neat and clean, and seem to be well adapted to the exigencies of the climate. They have fine broad galleries, inclosed with movable Venetian blinds, which serve as a sort of evening promenade for the occupants. Many of them have richly cultivated plats of ground attached to them, and as trees abound in every yard, the town, from a short distance, has the appearance of being embowered in a large garden. The streets might serve as a model for the New York city council, so free are they from

dirt and dust." . . . . "With regard to the climate, it is undoubtedly the most salubrious in the world. *Yellow fever is unknown here;* a delicious sea-breeze prevails constantly, and the thermometer in winter averages about 75° F."

The hotel mentioned, has been lately built by the government for the accommodation of visitors, and is well conducted. There are, besides, one or two very good boarding-houses. The charges at the hotel are reasonable, but there is a disposition to fleece strangers on the part of the keepers of the lesser establishments, as well as by boatmen, venders of fruit, "lavanderas," etc. The people have not yet entirely recovered from their old habit of considering every thing which comes to their shores in the light of wrecked property, and pluck accordingly—that is, if they are allowed. Any one offering one-fourth of the price asked for an article or service rendered, and refusing to advance, will be generally right, and will gain his end if he is firm; or all difficulty can be avoided by making a proper bargain beforehand for every thing one may need. Of course we speak of dealings with the lower orders of people, from whom supplies and services must come. No one, especially females, should go to Nassau without a servant, if one be necessary to comfort. The natives cannot be depended upon in this capacity, as they know too little of want and responsibility, and are apt to think themselves superior to their employers. There are good servants at the Victoria Hotel, but not elsewhere. The range of temperature during winter is correctly stated above at about 75° F., but it is subject to sudden changes, which are very uncomfortable, more especially if one happens to have selected a house without a chimney, as many of them are. Again, the objection to the northern coast of Cuba holds good with regard to Nassau; northers prevail sometimes during winter, and last from twenty-four hours to four or five days. Sometimes their violence is so considerable that no small vessel will venture to sea.

They are, however, not so frequent as on the coasts of Cuba and Florida.

The climate of the Bahamas is undoubtedly very healthy. There are no endemic diseases, if we except ague in a mild form, which prevails on some of the islands, particularly in winter, and scurvy, which is generally prevalent, to a greater or less extent, among the poorer whites and mulattoes. Now and then one meets with scrofula in the form of Pott's disease, or pulmonary consumption, but it is generally hereditary, and found in persons of mixed blood. Dysentery is sometimes seen in the summer, and is occasionally fatal, but it is never epidemic. Sporadic cases of yellow fever (contrary to what is asserted above), are also sometimes seen among foreigners, as sailors and others, who are imprudent with regard to the use of liquors and fruits, or who fatigue themselves inordinately, but it never, so far as we could learn, attacks the natives, nor has it ever been epidemic even among strangers. Very little rain falls in the winter. The police and sanitary management of the city are admirable. And there are enough pleasant people to make the society agreeable, when one is so fortunate as to make acquaintances, which can only be done by proper letters. The grand objection to Nassau and the Bahamas is the sameness in scenery and want of variety. One island may be taken as a picture of all, except that some are inhabited and others are not. After a few weeks, one (unless he is a naturalist, who will always find abundant amusement) gets tired of driving around the city of Nassau and the island upon which it is built, as can be done in a short time; and in a few weeks more, he becomes weary of sailing and fishing, although the finest in the world, and longs for a daily mail, or a newspaper, or something of the kind, which he cannot get.

Dr. Gibbes, after some observations concerning the nature and treatment of tubercular diseases of the lungs, thus sums up the value of a warm, equable climate in their cure or relief: "In a tropical region, the waste of the system from the combustion of the lungs, being small, less effort is required for the nutrition of the weak organs, which have a better chance of recovery than when full duty is required of them." (p. 200.)

This, although not elegantly expressed, conveys the proper meaning. The *idea* is to allow the lungs to rest as much as possible, by relieving them, so far as can be done from their part of the heat-making process or its results. We then stimulate the functions of the other organs, as the liver, skin, kidneys, etc., and take away the necessity for increased heat, which exists during winter in cold climates.

We always do a great deal with invalids, when not too late about it, by the change of habits and diet which traveling necessarily induces. Dr. Gibbes very sensibly advises that, to reap full advantage from the change, which he found so beneficial in his own case, the invalid must not wait until too late, or delay until his disease has made such advances as to render a cure impossible by any means whatever. This is the common fault, and the invalid is not always to blame for it; the physician frequently has a portion of the responsibility.

If those who are threatened with pulmonary consumption, will remember that their only hope for a cure is at the outset of their trouble, and seek the appropriate means, among which a change of climate, notwithstanding all that has been said against it, is one of the most important at that time, we should hear less of their hopeless condition; fewer estimable persons would die among strangers in pursuit of those delusive "phantoms" which hope ever conjures up before them.

AMERICAN MEDICAL BIOGRAPHY.

1.—*Lives of Eminent American Physicians and Surgeons of the Nineteenth Century.* Edited by SAMUEL D. GROSS, M.D., Professor of Surgery in the Jefferson Medical College of Philadelphia. Philadelphia: Lindsay & Blakiston, 1861. (pp. 836.)

2.—*The True Physician. An Anniversary Discourse delivered before the New York Academy of Medicine, November* 7, 1860. By JOHN WATSON, M.D., President of the Academy. New York: Samuel S. & William Wood, 1860. (pp. 44.)

THE connection of the two works we have placed at the head of this article may not at first sight be apparent, but a little reflection will show that the delineation of "The True Physician," such as the modest discourse of Dr. Watson assumes to give, must be but an epitome of the various characteristics of those physicians who have become eminent. This delineation will necessarily include the various qualifications which insure professional success, the obstacles which have to be overcome, and the circumstances which may be expected to attend such a career. These will differ in the various details of the life and character of each individual. Success will be attained by some in spite of obstacles which quite overpower others, and will even render brighter and stronger the sterling attributes of their character. Some achieve greatness from the concurrence of opportunities rather than from any great intrinsic merit, yet with the power rightly to seize upon and improve these adventitious circumstances.

"As nights to moons, so opportunities to men."

Of such men the life of Dr. J. C. Warren furnishes an instructive example. It is no disparagement to his character to assert that he owed the eminence he has attained in professional rank, quite as much to the prestige he derived from the eminent services of his father, and the field which that father's labor had cleared for his subsequent cultivation, as to any special brilliancy of genius. True, that field was cultivated with success, but it may be doubted whether the same relative success would have been achieved without these highly prized advantages. On the other hand, there are some who create opportunities, who compel circumstances, and "from adversity pluck success." To such men the want of early education and the *res augusta domi* of early life, instead of acting as depressing agents, serve as incentives to continued and strenuous exertions to supply these deficiencies. They but develop more fully the self-reliance and energy requisite to defeat every enemy. Our profession can boast of many examples of this trait of character.

"John Hunter, whose labors still live in British surgery and pathology, had not the advantages of early education, and had but little training in the literature or philosophy of his times. His studies, like those of his still more illustrious countryman, Shakspeare, were in the book of nature; and in his own section of this great book his skill of interpretation elicited principles not soon to be forgotten. Unyielding perseverance in experimental investigation was his ruling trait. This trait, by force of his example, was impressed upon many of his pupils, and, through them, on their descendants of the present day." (p. 25.)

"So also Ambrose Paré, who commenced his professional career in the humble rank of a barber-surgeon, was led, while yet a youth, by natural aptitude rather than by education, to expose errors and defects in the surgery of his epoch, and to introduce important innovations. Witness his simple treatment of gun-shot wounds, the ligature for arresting hemorrhage in amputations, and other kindred improvements, which rendered the name of Paré a watchword of the armies in which he served and secured to him for ever the enviable title of 'Father of French Surgery.'" (p. 26.)

Nor are the records of American Medical Biography silent in this respect. Several notable instances might be quoted as illustrations from the work of Dr. Gross, among which, undoubtedly, the careers of Dr. Godman and Dr. Daniel Drake stand most prominent. To each and all of these men might be truthfully applied the well-known line of Dryden in his eulogy upon Cromwell:

"For he was great ere fortune made him so."

Daniel Drake, whose name is so thoroughly identified with the professional history of Ohio, was born in New Jersey, but was brought by his father to Kentucky when 2½ years of age. Assisting his father during his youth on the farm at Mayslick, then an obsure backwoods settlement, his education was exceedingly limited. He had no opportunities of acquiring classical knowledge, until eighteen months after he commenced the study of medicine, and then his moderate acquisition was confined to the Latin tongue. In after-life he acquired some knowledge of French. In May, 1806, he commenced practice in Cincinnati, after attending one course of lectures at Philadelphia. It was not until 1815, that he attended a second course, at the same institution, from which he graduated in 1816. A little more than a year afterwards, he received his first appointment as a medical teacher at Transylvania University, Lexington, but only lectured one term. In 1819 he founded, at Cincinnati, the Medical College of Ohio, but "misunderstandings soon sprung up, and Dr. Drake was expelled from the school by two of his colleagues, he himself being the presiding officer on the occasion." He re-entered Transylvania University in 1823, and continued in that institution until 1827, when he finally retired to Cincinnati. In 1830 he was called to the professorship of medicine in the Jefferson College at Philadelphia, but only remained one term. In 1835 he established the Medical Department of Cincinnati College, which ran a short but brilliant career of four years. When this school was disbanded, Dr. Drake entered the Louisville University, where he continued to lecture with eminent success until the year 1849. He then reunited himself to his early love, Ohio Medical College, but troubles caused his resignation, and at the close of one term he found himself without a professor's chair. Returning to Louisville in 1850, he remained two sessions, when he finally left it once more to lecture in the Ohio Medical

College in 1852. The session had hardly opened before the hand of death was laid upon him, in the 67th year of his age. He was always an active literary man—lectured with great eloquence, not only on medical topics, but upon subjects of moral and general interest. In 1821 he procured the establishment of the Commercial Hospital at Cincinnati, and by his appeals was largely instrumental in the establishment of the Blind Asylums at Columbus and Louisville, and of Marine Hospitals in the West generally. Among his best literary performances are his "Picture of Cincinnati," and his numerous contributions to the "Western Journal of the Medical and Physical Sciences," which he established in 1827, and continued to edit until 1848. His great work, however, was upon the "Diseases of the Valley of the Mississippi," in two volumes, the last of which was published after his death. "The two together," says Dr. Gross, "constitute a monument of the genius of their author as durable as the mountains and the valleys, whose medical history they are designed to portray and illustrate. The toil and labor expended upon their production afford a happy exemplification of what may be accomplished by the well-directed and persistent efforts of a single individual, unaided by wealth, and unsupported by the patronage of his profession."

It may be said, however, that the two classes we have glanced at are rather exceptional, that the majority of those who attain success do not belong to either, and that most men are neither favored with great opportunities, nor exposed to inordinate struggles. What then are the prerequisites to success in the ordinary course of professional life? Dr. Watson thus enumerates the several qualifications essential to this object:

> "With fitting opportunities and careful study, most men may learn to recognize the ordinary forms of disease, and to distinguish these from one another; but the power of detecting diseases in their obscurer shades, at seasons and under circumstances uncommon to them, when latent, complicated, perverted, or masked by their concomitants, belongs, as a special gift, only to the well-trained

practical observer. Skill of this kind, in its highest degree, is never the result of education merely. It is no simple acquisition of the class-room. It is never reached through the abstract study of logic or philosophy. But, whilst it implies careful preparation, and a fair amount of practical training, it implies, beyond these, something proper to the individual: a mind imbued with the love of truth, and with zeal in its pursuit; a judgment quick, accurate, and discriminating; habits of investigation, of intense reflection, of looking beyond appearances to things as they are; disposition and ability to win and secure confidence; powers of combination, of comparison, and analysis; insight into ruling motives; a knowledge of the world, and especially of the habits, circumstances, language, and expressions of the sick; and, added to all these, a ready perception of the ever-varying phases of disease, their import and tendency, as well as of the agencies, immediate or remote, that modify or induce them.

"The full enjoyment of these several qualifications is, perhaps, never within the reach of a single individual. Perfection is to be conceived by us rather than to be seen. The beau-ideal of the human form embodied in the Apollo Belvidere, or in the Venus de Medici, is the combined transcript of excellencies from many quarters. And in our contemplation of medical acumen we must treat of this, too, as an abstraction, the traits of which are to be collected and set together from numerous individual sources." (pp. 6, 7.)

The self-education of the physician should constitute one of his chief cares. By careful, persevering and continued labor, he may succeed in an eminent degree, without many of those advantages which are often deemed essential to the cultivation of his powers of observation. Thus the clinical advantages derived from the large and compact experience of hospital practice, or in extensive cities, however desirable, are not absolutely necessary to him who is able to improve all the opportunities within his reach.

"The Pathological Researches of Abercrombie were not the product of hospital experience. With the desire to enrich the profession by the careful and well-digested record of facts, he found the means of effecting his object where others have too often overlooked them—in the walks of private practice. Scarpa, who did so much for surgery, lived in a small town. Allowing no opportunity of investigation to escape him, he contributed much to elevate his art, and has thereby secured a name not soon to be forgotten. It does not appear that Sydenham ever officiated as an hospital physician. Galen, though for a time a resident of Rome, owed his reputation to the studies of his earlier years in Asia Minor. Hippocrates was never long the inhabitant of a great city, but spent most of his life on the small islands and among the rural districts of Greece. Amid the rush of business, with important facts continually crowding each other before our eyes, there is no leisure for minute investigation. It is by the close and careful study of single cases, rather than by the illimitable opportunities of hospital experience, that the judgment is ripened and the art of medicine improved." (pp. 10. 11.)

If from the large clinical resources furnished by Philadelphia and New York, Dorsey and Physick, Hosack and McClellan, gleaned the materials upon which they based their observations, it is no less true that the triumphs of surgery which McDowell achieved were gained amid the daily trials of a country practice, and the philosophic works of Elisha Bartlett were composed within the limit of a small manufacturing town, or amid the soothing influences of rural scenery, often, alas, accompanied with the depressing effects of physical suffering and debility.

Patient devotion to whatever professional duty falls within his sphere, persevering, ill-requited labor for many years, assiduous application to study to prepare for the gleaning of the riper harvest, hope leads him to expect, surely, though often slowly, to reach the attractive goal his youthful fancy pictured in the distance at the outset of his career. When Dr. Horner, in 1816, removed from Warrenton to try his fortune in Philadelphia, his biographer describes him as "unaided by friends, unbacked by influence, unknown and poor. He had come to move with the dashing tide of a great city, and sink or swim upon its troubled waters. The prospect for success seemed very dim, but the qualities with which he commenced the battle of life were integrity, pure and incorruptible, untiring perseverance, zeal and earnestness; with these were united a devoted love of his profession, and an extensive acquaintance with it for one so young, and whose opportunities had been so limited. He possessed the best of all talents, the faculty of intense application to the thing in hand, a perfect concentration of his mind upon the subject before it." During that winter he notes in his diary: "My prospects are unflattering, but patience and perseverance may enable me to surmount the difficulties which oppose my progress; at all events, I shall put my shoulder to the wheel." And he did put his shoulder to the wheel. The next year witnessed his success in his receiving from Dr. Wistar the appointment of his dissector, at a salary of $500, which he continued under Drs. Wistar, Dorsey and Physick successively, until the 17th November, 1819, when he was appointed Adjunct Professor of Anatomy, a place of considerable emolument and high professional distinction. The hard struggle was now over, the wolf was driven from the door, and the road open to the great professional success he afterwards arrived at. But the struggle had not been gained without a bitter fight, and the victory was only little better than defeat, for it was purchased at a price which few knew of until after his death. His biographer thus briefly sketches one of the most long-continued and severe mental struggles that history affords:

> "About this period, owing to intense application and his sedentary life, it (his health) had began seriously to suffer. The disorder of his physical faculties took the form of a dull headache, which was with but few intermissions his companion from this time until his death, and a dyspeptic derangement of the stomach, which affected his mind very powerfully, producing frequently gloomy fits of hypochondriasm. But so complete a mastery over himself had his indomitable energy and force of will acquired, that even in the worst of these fits his outward demeanor was unchanged. He went upon the apparently quiet tenor of his way, in the daily round of duty, and none knew the effort that it cost him." (p. 708.)

For several years Dr. Horner's position became better and better. In November, 1831, by a unanimous vote of the trustees of the University of Pennsylvania, he was selected to the Chair of Anatomy, now vacated by the aged and failing Physick. "Thus in fifteen years from the time of his settling in Philadelphia, we find him in a position, the first in his particular branch, and fully equal to any in the profession of medicine."

Dr. Watson says, "the man of capacity, properly measuring his own forces, with a definite object in view steadily pursued, is apt to reach that object in the end." He illustrates this remark by an incident in the life of Portal, who, at entering Paris young, poor and in pursuit of professional knowledge, determined, as the object of his ambition, to be the first physician to the king, and many years afterwards had by his labors and position won the post. Is not this, although true, somewhat too unfavorable a view? Do not we thus forget those equally brave who fall in the march? The toils and privations of the way are borne, nay, cheerfully borne by them, but no "Te Deum" celebrates their triumph, as, exhausted and faint, they sat down by the wayside to suffer and die. Still as a general truth it may be stated, that knowledge, industry, a kindliness of disposition and integrity of soul, are the qualities which insure success. The aid of urbane manners, and that intuitive refinement of feeling which underlies the character of the true gentleman, is incomparable. The true physician will be careful of the interests of those who consult him. The depository of confidence, he will never betray any information coming to him through his professional relations, nor will he run the chance of wounding the feelings of others, by incessant babbling, like those who love to proclaim on the house-tops all they know or have heard, and much which they conjecture. A beautiful instance of this feeling in a noble old physician is given by Dr. Watson:

> "In the time of the civil war of England, a Puritan soldier, evidently a man of rank, called upon Hamey for advice. After modestly attending to the long preface with which the circumstances of the case were introduced, Hamey assured him of his confidence, and gave him hopes of relief. The generous soldier drew from his pocket a bag of gold and offered it in a lump to his physician. This extraordinary fee was surprising to Hamey; and, pressing as were his pecuniary affairs at the time, it was modestly declined. But the grateful patient, grasping in his hand as much coin as he could hold in his fist, put it into the doctor's pocket; and took his leave. This fee was doubtless intended, in part at least, as the price of secrecy. But with Hamey this precaution was unnecessary, as it always ought to be with the members of a profession, the very essence of

> which is honor and confidence. The name of this generous soldier, as we are told by the author of 'The Gold-Headed Cane,'—a work which I am disposed to attribute to Sir Henry Halford—is never once mentioned in the life of Hamey, though there is good reason to believe he was no other than Ireton, the son-in-law of Cromwell." (p. 34.)

But the reflections which the character of these works has evoked, have already been too prolonged. We could gladly draw from the ample resources of Dr. Gross's volume, illustrations of the aims and qualifications of the true physician, but forbear, as we must add a word as to the books themselves.

Dr. Watson's Discourse evinces a mind well stored, not only with medical knowledge, but shows a familiarity with the more genial walks of literature, and a faculty in turning these acquisitions to the greatest advantage.

But we regret that Dr. Watson has given the weight of his authority to perpetuate the groundless charges embodied in the following sentences:

> "Socrates, about to suffer for his exalted faith in a Supreme Being, is consulting his familiar demon ; he offers his libation from the fatal bowl, and with his latest breath orders the sacrifice of a cock to Æsculapius! Bacon, the founder of inductive philosophy, with all his intellectual penetration, conforms to the spirit of a venal age, and barters his judicial decisions for a bribe." (p. 3.)

There is no allusion to the demon of Socrates, which cannot be explained by the supposition, that he intended to defer to the "inner monitor" his retentive sense of right—his enlightened conscience. As to Bacon, respecting whom Dr. W. evidently follows Pope, in the opinion that he was

> "The greatest, wisest, *meanest* of mankind,"

we commend him to the tender mercies of Hepworth, Dixon, Spedding and others, whose researches prove that his undoubtedly intellectual pre-eminence was not sullied by the moral obliquity which vindictive malice first attached to his name, and which ignorant prejudice has labored to perpetuate.

The "American Medical Biography" includes thirty-three distinct lives. The venerable Dr. Samuel Jackson contributes a very genial biography of the illustrious Rush, an excellent portrait of whom, from the painting by Sully, adorns the volume. Dr. Caspar Morris is the author of the memoirs of Caspar Wistar and Thomas C. James. Dr. Gross writes the lives of John Tyng Dorsey, Daniel Drake and Ephraim McDowell. Dr. John W. Francis, "nomen clarum et venerabile," contributes vivid sketches of Dr. McNeven and S. L. Mitchell. Our friend, Dr. Sandford B. Hunt of Buffalo, departs from the beaten track of biographers, and, by a clear and philosophical discussion of the labors and discoveries of Samuel G. Morton, erects a monment to his memory, not less enduring than interesting. When all is so well executed, it is invidious, perhaps, to point out special excellence. Altogether the book is a noble tribute of filial piety to the memory of departed worth. Its perusal cannot fail to excite the emulation of the present race of professional men to increased exertions in the glorious rivalry of doing good, while to the down-hearted, upon whom the day of success has not yet dawned, it will impart fresh courage by the recital of the imperishable examples of those who have gone before.

MALPRACTICE AND MEDICAL EVIDENCE.

A Medico-legal Treatise on Malpractice and Medical Evidence, comprising the elements of Medical Jurisprudence. By JOHN J. ELWELL, M.D., Member of the Cleveland Bar. New York: John S. Vorhees. Cleveland, O.: Alfred Elwell & Co., 1860. (pp. 588.)

THERE is no deficiency in the number of works upon Medical Jurisprudence in our language, or of Monographs on special topics included in that department of science. The works of the Becks, of Chitty, of Wharton and Stillé, of Guy, of Fonblanque and Paris, on the general subject; of Taylor, and Christison and others, on Toxicology, and of Ray, Prichard, Winslow, Buckwill, Mayo, Coventry, Fagin and others upon the juridical relations of Insanity, are well known to both the professions, and notwithstanding some difference of opinion as to the justness of their views upon certain mooted points, the great ability and general candor and research exhibited in these works have been universally appreciated. But in none of these works has that attention been paid to the causes of action which flow out of the peculiar relations of the medical profession to the public generally, which the importance of the subject demands. Dr. Elwell, now a barrister, once a medical practitioner, and doubtless on this point *haud ignarus misericordiæ*, has learned *alliis miseriis miserere*, and the chief excellence of his book consists in the plan of including actions for "malpractice," and the attempt to lay down the principles which must guide their decision. Thus 260 pages of the book are devoted to this subject. They include a discussion of malpractice, from amputation in fractures and dislocations—in ophthalmic medicine and surgery—the responsibilities of druggists—criminal malpractice—abortion and fœticide, and the leading cases which refer to these questions, are given fully and fairly. An excellent summary of the report of Professor Frank H.

Hamilton of Buffalo is given, as a basis for the inquiry of the average results of surgical treatment of fractures and dislocations, the most fruitful source of actions for malpractice, and the position is fully sustained that many of the untoward results of which parties complain, are due less to any deficiency of skill of the attendant than to the imperfections of the art itself. The weak point in the defense of these actions is, however, to be found not in the want of skill of the medical man, nor even in the results of the cases, but in the *want of attention* towards the end of the treatment, and it cannot be too strongly impressed upon all in attendance upon that class of persons, by whom these actions are usually brought (and the class is distinct and well marked), that it is better to see the case too often than too seldom. Unnecessary visits never hurt the case before a jury—long absence or any act that can be twisted into neglect, are uniformly the points of danger to the prosecuted surgeon. As no pecuniary expectations can usually be attached to the surgeon, the frequency of visits can never be charged to any mercenary motives. Nor should the surgeon tolerate any interference by the patient or others in his treatment. Acquiescence, or even a want of precaution in the proof of his protestation against the probable results, will be urged against him to render him liable for any ill results. We welcome the book of Dr. Elwell, as the pioneer in this branch of medical jurisprudence, and commend its perusal to the profession of medicine. At least it will assist the surgeon to know his rights. When known they will no doubt be maintained.

The remainder of the volume embraces the subjects of Medical Evidence in general, Insanity, and Poisons. They are judiciously treated, though of course all the arguments will not prove satisfactory to every body. We have noticed some important omissions in this branch of the subject, but this is to be expected in a work of the size and scope of the one before us. As we shall make these subjects the basis of a more extended examination in a short time, we dismiss the matter at present with the expression of our satisfaction at this effort of Dr. Elwell in the right direction, and a hope that the patronage of both professions will lead to an early call for a new edition, when redundancies can be pruned and deficiencies supplied.

CURRENT MEDICAL LITERATURE.

Proceedings of State Medical Societies.—We have received the Reports of the Transactions of the State Medical Societies of Pennsylvania, Indiana, and Ohio, for 1860, and are delighted to find that each is prospering in its own good way. The Reports embraced in these volumes are characterized by a freshness and vigor that are truly refreshing in these days of platitude. We were particularly pleased with the address of Dr. Brower, the retiring president of the Indiana State Society, wherein a lucid account of the more noticeable discoveries and improvements in medical science is given. The address of Dr. Firestone, our own president, contains many important truths worthy of remembrance, especially at the present time. We need hardly add they are fitly told. Dr. Condie, the president of the Pennsylvania Society, gives a valedictory characterized, as is every thing he writes, by great ability and culture, but somewhat despondent in its tone. It appeals to the profession of Pennsylvania upon the necessity of a greater attention to organization—an appeal which we trust will be successful. Altogether, the Transactions of these three State Societies augur a fair degree of future usefulness and an amount of talent and working ability which must ensure success.

Braithwaite's Retrospect for January, 1861, is, like its predecessors, full of matter as an egg is full of meat. It is a work of supererogation to speak of its excellences.

Statistics of Insanity, by RICHARD J. DUNGLISON, M.D., is a pamphlet of moderate size, and gives the fullest collection of the statistics of Insanity derived from the operation of our own Institutions, that has ever been laid before the public.

Memoranda Medica.—A typographical error made us do unintentional injustice to Dr. Hartshorne, in the notice of his excellent little work "Memoranda Medica," in our last number. The word *empyemia* should have read *emphysema;* the passage to which we took exceptions reading as follows: "A lung expanded by emphysema or hypertrophied, will also give an exaggerated vesicular murmur."

In this statement we still differ from our author, believing that the condition of lung known as emphysematous, is characterized by auscultatory signs just the opposite of "exaggerated vesicular murmur," in support of which we refer to the following authorities:

Prof. Flint, in his work on "Physical Exploration" (page 445), speaking of "the auscultatory phenomena due to emphysema," says, "feebleness of the respiratory murmur is one of the distinctive features.

Dr. Walshe, in his Treatise on Diseases of the Heart and Lungs, Am. Ed. 1851, page 332, says: "Of the occasional existence of such exaggeration, in lung substance *on the confines* of circumscribed emphysema, I have satisfied myself by a considerable number of observations, *but on the whole it is rare*."

Dr. Hughes, page 139, says: "The natural inspiratory murmur is greatly decreased both as regards intensity and duration."

In hypertrophied lung we acknowledge that the respiratory murmur is always loud and vesicular, if unaccompanied by bronchial catarrh.

We repeat, however, our high appreciation of the general scope and the excellences of this little work.

PART II.—ESSAYS AND CORRESPONDENCE.

DIPTHERIA.

Notes from a Clinical Lecture, delivered at Starling Medical College, January 9, 1861. By S. M. SMITH, M.D., Prof. of Theory and Practice.

PROF. SMITH first traced the recorded history of Diptheria, expressing the opinion that it is not a new disease, but has existed for an indefinite length of time under other names; he then devoted some time to a consideration of its resemblance to erysipelas, scarlet fever, etc., and after a few remarks upon its pathology, not differing in this from the generally received opinions of the profession in our country, he passed to a detailed account of its prevalence, in an epidemic form, in the city of Columbus. It is the substance of his remarks upon this epidemic, which we more particularly desire to present to our readers.

The first cases brought to his notice occurred more than a year ago, in the practice of a physician in London, Madison county, where he had been called in consultation. At that time he saw seven patients, all of whom had the disease in a virulent form, five of whom afterwards died. During the month of March last, two cases occured in his own practice, both of which proved fatal. From that time until August, no more came under his observation. Since the month of August, some 600 cases have occurred in the practice of himself and partner. He has never seen an epidemic prevail more generally throughout the community, exceeding even the cholera in this particular.

The type of the disease has been mild, only three deaths occurring out of the 600 cases. In this regard it is not different in character from other epidemic diseases, some of which, scarlatina for example, often prevail very generally, and not a single fatal case occurs; then again the reverse will be true. In the majority of cases constitutional symptoms preceded any local manifestation of the disease. There would be slight rigors, with some amounting to a decided chill, followed by fever, pains in the extremities, and great lassitude. After 36 or 48 hours the fever would subside, and not usually return. About this time the peculiar exudation would make its appearance upon the mucous membrane of the fauces or roof of the mouth. The extent of the local affection was varied, in some quite limited, in others extensive, involving sometimes the mucous lining of the larynx, sometimes of the nasal passages and frontal sinuses, and in one case the vulva.

Complications.—The glands of the neck, including the parotid, were frequently swollen and tender, adding greatly to the discomfort of the patient. Rheumatism occurred during the course of the disease in three cases, and as a sequence in nine others.

Sequelae. — Nervous Exhaustion. In two of the fatal cases already mentioned, death seemed to be caused by sheer exhaustion, or an apparent limitation of the vital powers, without any perceptible morbid condition. Disturbance of Vision. In three cases well-marked amaurosis followed, one of these being totally unable to read, and another, when recovery began, saw double for some time. Paralysis — partial — occurred in a few cases, in one almost amounting to hemiplegia. Chorea well marked followed in two cases, and partially in another. In one, the patient (a little girl) was unable to feed herself. Vesicular and erythematous eruptions also, complicated or followed many of the cases.

Treatment. — Believing the disease to be constitutional, and specific in character, attended by rapidly debilitating influences, the treatment adopted in all cases has been such as in his judgment best met these indications. As general remedies, he used the chlorate of potash, in a saturated solution; iron and quinine as tonics, and alcoholic stimulants, the latter freely. Locally he used some mild astringenst, uch as alum dissolved in a decoction of green tea, preferring very much the effect of this to more caustic applications. He considers the great mistakes in the treatment of this disease to be—first, the failure to recognize it as a constitutional disease; second, the meddlesome application of caustics to the throat, and third, the postponement of sustaining treatment.

The value of stimulants, he thinks, cannot be too highly estimated, his own experience having taught him that patients with decided diptheria, often not only tolerate but absolutely require large quantities of brandy or whiskey to maintain life. He gave as an illustration of this opinion, the history of a patient seven years old, to whom he was called one night, and found suffering with laryngeal diptheria. The patient was in great distress from difficulty of breathing, which was attended by the loud cooing sound peculiar to croup. The pulse was rapid, 130 to the minute, and the patient evidently very much enfeebled. This case might have been mistaken for ordinary croup, and had the usual treatment for that disease been adopted, it would, no doubt, have been a fatal error. On the contrary, the opposite plan was pursued. A table-spoonful of brandy was given at intervals, at first of fifteen minutes, which were gradually extended as the severity of the symptoms abated. This was attended with the happiest effect, the difficult breathing subsided, and after two or three hours the patient slept. He was then put upon the treatment mentioned above, and recovered without further difficulty. Of course this heroic use of stimulants is not often necessary, and this case is only mentioned to show the extent of the constitutional debility created by this disease, and the importance of their free use when the necessity exists.

PART III.—FOREIGN SELECTIONS.

HISTORICAL OPINIONS OPPOSED TO MODERN DENUNCIATIONS OF THE USE OF MERCURY IN THE TREATMENT OF SYPHILIS.

BY DR. H. HAESER, PROF. AT GREIFSWALD.

[Archiv fur pathologische Anatomie und Physiologie und fur klinische Medicin. Translated for the Columbus Review, by C. E. Boyle, M.D.]

" Verum ibi falsum hoc est, quod videtur quibusdam, tubera, collectiones, sinus et nodos non esse hujus morbi propria, aut necessario eum consequi, sed provenire his, qui peruncti sint, ex argenti vivi malitia. Quamquam in hac opinione magna per Germaniam medicorum pars in hunc usque diem pertinacissime haeret. Sed hi, quotquot sunt, ut in aliis de hoc morbo multis turpiter falluntur, ita hoc temere persuadere conati sunt. Nam contigisse haec, quos nulla unquam tetigeret perunctio, ipse vidi multis, et in his Ulricho de Hutton, patri meo." Ulric. de Hutten. De morbi gallici curatione per administrationem ligni Guajaci. (1519.) c. 3. (Luisinus. p. 280.)

The contention concerning the admissiblity of mercury in the treatment of syphilis (Die Nachtheile der Murkurialkur. Vienna, 1859. 8.) recently excited by Dr. Hermann—a contention which, like that of the advantages resulting from vaccination and blood-letting, must be witnessed at least once in each generation, has virtually, in my opinion, been set at rest by the teachings of Virchow and Waller (Prag. Viert. Jahrschr. 1859. III.) The following lines are intended only as a supplementary examination of the historical supports adduced by the opposers of mercury to sustain their opinions.

The very first lines of Hermann's preface prove that the compiler happily belongs to that class who are fully conscious of "the glorious progress we have made." "The injurious results of mercurial treatment were but little known until our times: indeed, ancient physicians scarcely had an indistinct misgiving that mercury incorporated into the body remains many years in the organism, and may produce long afterwards, various destructive and often incurable diseases. This fact has, for the first time, been verified by the exact investigation of the present time:

a whole host of diseases, often of the most important kind, are unquestionably due to the operation of mercury."

There is no need of proof that what we designate as constitutional syphilis was well known to the earliest observers of syphilis at the time of its general prevalence at the end of the 15th and during the first decade of the 16th centuries. Now Hermann asserts that this "constitutional syphilis" originated from the administration of mercury to cure the hitherto far milder disease. Hermann supposes that "constitutional syphilis first occurred when mercury began to be used, particularly about the middle of the 16th century, by Francis I., and in the form of Barbarossa's pills."

Athough these words do not place the historical knowledge of Hermann with his subject in a very favorable light, yet his immediately following explanation as to the method by which those physicians arrived at self-deception concerning the true nature of constitutional syphilis, does so in a much less degree.

"The first physicians," says Hermann, after asking the reader to "imagine" himself in their position, "treated syphilis, doubtless both chancre and gonorrhœa, with mercurials." Notwithstanding the complete ignorance evinced by these words, in regard to the earliest periods of syphilis, the recommendation is made to "suppose" one's self in the position of those physicians, when a recommendation to study their writings, which are accessible to every one in the collections of Luisinus, Gruner, Fuchs, etc., would have been more to the point. By such a proceeding the compiler would soon have made the discovery that "primary syphilis" did not at all present itself "undoubtedly" to those physicians as gonorrhœa and chancre, and that they least of all treated gonorrhœa and chancre with mercurials.

The cardinal assertions of Hermann amount to this, that "constitutional syphilis is the product of mercury," and "this fact which has been, for the first time, verified by the exact investigation of the present time," might better be read "by Drs. Hermann, Lorinser, and Kletzinsky."

Let us examine whether these assertions are founded in fact.

The earliest observers of syphilis did not determine to apply mercurial inunction until a long-continued opposition, because they feared the most injurious consequences from its "coldness," particularly in cutaneous affections, which, as the most prominent symptom, received a very large share of attention. Besides, the powerful effect of mercury upon the mouth was well known, as it had for a long time been a common remedy in various cutaneous diseases.* The success of its application observed in these diseases induced its use in this new malady also; soon becoming a remedy of general use among physicians, but opposed by many, its abuse by the profession, and the dangers of salivation being depicted in the most frightful colors. Many writers also affirmed that mercury was by no means a certain remedy in syphilis; consequently, the use of guiacum became for a time the prevailing mode.

It is easy to understand that the mercurial treatment frequently produced the worst consequences, and not infrequently death, when we read in *Torella*, for example, that a salve weighing 54 ounces contained 4 ounces of mercury, and that inunction with this of the whole body was continued for nine days (Luisinus, p. 527). Yet the assertion that "constitutional syphilis" was produced by mercury is not found in the writings of any of the early writers. They had, as Hermann says, "no idea" of this effect of the metal.

Among the most decided opposers of mercury is Leoni. His detestation of it is as great as could be desired. "There is nothing more injurious to those affected with syphilis than to use mercury externally or internally, under the form of ointments or fumigations. From such applications persons always suffer in important organs." (Luisin. p. 904.) "Important organs" are the brain, from which was supposed to flow the material of the saliva, the lungs, the heart, the liver. Leoni likewise describes the gummata, the nodes, the pains of the bones, but he had "no idea that these might be artificial effects."

Yet even at that time such objections were not wanting. They are most definitely discussed by Fallopia, the anatomist, during the later period of the guiacum method of cure. Fallopia designates the gummata, tophi, etc., of the majority of cases, as the effect of mercury, and puts the greatest stress upon this opinion. "The causes of the tumors," says Fallopia, "originate in the affected viscera, but, in most cases, after inunction by mercury." (Luisin. p. 826.) Accordingly, Fallopia asserts that gummata, etc., may be produced by the disease itself, but occur most frequently after the use of mercury which has not cured the disease. He explains this process as follows: "When these parts are anointed they become enfeebled, and are thus then selected by the disease." He believes, therefore, that gummata, etc., arise because the mercury has weakened the particular part, thus inviting the disease there." (Luisin. p. 827.) But, from the preceding words, it appears that even Fallopia finds a residue of cases in which gummata are not to be ascribed to mercury. On the other hand, Fallopia attributes caries of the bones in syphilitic patients entirely to the influence of mercury. "The infection of the bones in syphilis is terrible, and the more so because they are infected in such parts as do not permit of a cure, as the bones of the head which are designed to inclose and protect the brain, and these I have seen so much affected as to be all carious. I have many examples. Sometimes the bones of the palate are so much involved that the whole palate decays, and not these only, but the nasal bones also; and it should be borne in mind that it is not in every inveterate case of syphilis that this occurs, but only in those in which mercurial inunction has been employed." (Luisin. p. 827.)

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* Notices of the use of mercury, before the period of the general spread of syphilis, are, it is true, difficult to find. The following is one of the earliest and most important: Magister Bartolemus, a Salernian, in his "Practice," recommends for scabies and pruritus, a salve of lime-water, oil, sheep's-tallow and mercury, the latter "ad libitum." "Cave tamen, ne hoc unguento ungas habentes quaedam apostemata livida in tibiis et coxibus, quod quidem vulgus consuevit appellare malum mortuum. Inflat enim gulam et fauces, unde quidam suffocantur." (Collectio Salernitana, ed. de Renzi. Naples, 1856. 8. vol. IV. p 370.)

Notwithstanding, Fallopia had not the idea that mercury produced only injurious effects under all circumstances, for, with all these objections, he considered mercury capable of overcoming the disease. (Luisin. p. 810.) We quote also the following, from the same source: "A third most excellent method is with pure mercury, which being absorbed overcomes the disease, expelling excrementa at the palate. For me it does this admirably." (Luisin. p. 782.)

The principal reason for the distrust with which Fallopia regarded mercury was his preference for the "cura regia," i. e. by the use of evacuants and the methodic employment of guiacum. "Why use mercury by which health is not so certainly nor so safely secured? *If it does not cure*, it aggravates and the disease becomes more stubborn." Fallopia does not therefore doubt the curative power of mercury, but considers it less certain than the cura regia. Whether this opinion was well founded, we may learn from what our author says further. "I do not approve of this medicament, but use it sometimes when I have not been able to succeed by the cura regia." The cura regia, therefore, sometimes failed, and then Fallopia had recourse to mercury, under what circumstances and with what success the following quotation will show: "I have seen a young man laboring under syphilis in which every method had failed. An empiric cured him with mercury. Wherefore I have made use of it in stubborn and desperate cases, and particularly where I have first tried all other methods." (Luisin. p. 810.) And many others after him who never grew weary of declaiming against mercury, had, like him, recourse to it in "stubborn and desperate cases." Every thing else failed them, but unlike Fallopia, they did not always honorably let the world know the truth.

If the quotations hitherto given from the writings of the opponents of mercury are but little calculated to support the opinion of Hermann, that constitutional syphilis first appeared after the employment of this metal, and that the earlier physicians had "no idea" of such an effect produced by it, the assertions of other physicians, who did not participate in the opinions of those named in regard to mercury, are still less favorable to his views.

That the complaints mentioned by Hermann were not wanting in the earlier periods of the general prevalence of syphilis, is evident from the fact that several physicians defended mercury pointedly and fully against these objections. For example, Leonardo Botallo, one of the most experienced writers upon syphilis in the sixteenth century, says: "Why do various parts of the body become inflamed and ulcerated, the bones even not being exempt, in patients who have never used mercury? Why does their color become leaden? What produces, keeps up and increases other various severe symptoms before mercury has been used, unless it be the vitiated humors?"

Then, as now, those physicians who used mercury carefully, and by such use not only produced no constitutional symptoms, but, on the contrary, avoided them, best know how unfounded are such objections. Victorius furnishes an example of the employment of a salve in which a *little* mercury was added to eight ounces of fat. This salve cured syphilis —"tum membrorum dolores *sedando*, tum foedas pustulas et sordida ulcera *abolendo*, tum etiam gummosa tubercula et nodos gallicos *amovendo*." (Luisin. p. 634.) Effects which remind me of Sigmund's process followed by myself in many cases.

So much for a doctrine which, like its predecessors, will in a short time, and it is to be hoped forever, be consigned to oblivion, a place assigned to it by a non-professional writer 340 years since, when as, at the present, the most unfounded aspersions were heaped upon physicians who were at least our equals, and the "exact investigations" of the present are boasted without the examination having been made, as Waller has shown, as to whether mercury may not be found even in the urine of persons who have never been syphilitic and have never been subjected to a mercurial treatment.

WASTING PARALYSIS.

[Extracted from an article on the More Unusual Forms of Paralysis, by WILLIAM ROBERTS, M.D., London, Physician to the Manchester Royal Infirmary.]

THE next case, which has only recently come under my care, is one of the best marked examples of wasting palsy that I have witnessed. The disease is presented simple and uncomplicated, without neuralgia or rheumatic pains, without cramps or contractions of the muscles, and without the least trace of nervous paralysis. In the parts affected, it combines the two instances before related; for the atrophy has seized upon the upper segments of both the upper and lower extremities, leaving the lower segments uninjured, and thereby occasioning a strange and curious deformity.

The patient is a healthy-looking man of thirty-eight years. He was formerly a warehouseman, and subsequently he taught a school. He thinks the muscular strength has been slowly declining for sixteen or eighteen years, but during the last two or three years the disease has made much more rapid progress.

When he is stripped, the nature of his ailment is at once revealed, without the necessity of asking a question. The two upper arms are like those of a child—so small and thin, while the shoulders above, and the forearms and hands below, are of the full proportions of a moderately muscular man. The odd appearance of the shoulder-blades likewise, immediately strikes the beholder. Instead of being bound down to the surface of the ribs in the usual way, the scapulæ lie loosely beneath the skin, and on the least attempt at moving the arms, their lower angles are thrust backward and upward above the level of the arm-pits; and they project under the skin so prominently as to look like a pair of incipient wings. This singular condition arises from the total destruction of the muscles binding the shoulders to the trunk—namely, the serrati, the rhomboidei, the pectorales, the trapezii, and the lat. dorsi. In the lower extremities the atrophy has followed a corresponding course. The thighs are greatly emaciated, while the legs are stout and strong.

The muscular action is weakened in proportion to the atrophy of the muscles. The hands and forearms possess in perfection all their proper movements. The patient writes with facility, and grasps with force The forearm can be flexed and extended with readiness, but so feebly, that a two-ounce weight in the right hand and a four-ounce weight in the left, suffices to overcome the utmost resistance of the biceps and brachialis anticus.

When the patient stands erect, the abdomen is protruded, and a corresponding deep concavity occupies the lumbar region behind. He walks slowly and with evident difficulty; yet he can accomplish considerable distances—three or four miles—if permitted to walk at his ease. Ascending stairs is a painful labor to him.

The right and left are affected almost exactly alike, and the disease is confined to four groups of muscles on each side—namely, in the upper limb, *(a)* those which unite the shoulder to the chest, *(b)* those which move the elbow-joint; and in the lower limb, *(c)* those, which move the hip, and *(d)* those which move the knee joint.

There is this singularity in the upper limb which is absent from the lower, that the scapulo-humeral muscles, comprising the deltoid, the supra and infra-spinatus, the subscapularis and the teres major and minor, continue vigorous and well-nourished, isolated between the group above and the group below, of which the muscles have degenerated almost to the verge of annihilation.

Another very characteristic feature of wasting palsy, where it exists, is here represented. I allude to its *dissecting* course—the singling out of a muscle or a part of a muscle for preservation amid the decay of the surrounding tissues. Both pectorals possess one fasciculus in tolerable preservation, and one bundle of each trapezius is likewise spared.

What remains of the wasted muscles is perfectly under the control of the will. The skin is acutely sensitive, and a feeling of cold is frequently complained of.

Concerning the determining cause of this man's complaint, the most searching inquiry has failed to elicit any thing satisfactory. The most reasonable explanation is one offered by the patient himself—who, I may remark, is a man of unusual intelligence—that it has arisen from excessive exposure to cold. When occupied as a warehouseman, he was compelled to work in rooms devoid of fire. The cold was severely felt by him at the time, and he frequently went home quite benumbed. It is from this period that he dates the first commencement of his ailment.

By far the largest number of cases of wasting palsy are produced by undue and too long continued strain on the muscles; accordingly artisans are found to be the most frequent victims of partial atrophy, and the disease falls with unerring certainty on the groups of muscles most tried. The same fact comes out with clearness when the frequency of the disease in the right arm, and the left is considered. On a comparison of a large number of cases, I found that the right arm was more than three times more frequently attacked than the left; and in the two hands the proportion was three to one in favor of the right.

Masons and mechanics, who wield heavy hammers, have the muscles of the shoulders first attacked; shoemakers, tailors, and milliners are first seized in the hands.

A Middleton silk weaver lately under my care, exhibited an example of wasting palsy, confined to a single muscle. When he was employed at the loom the index finger of the right hand was used to lift up a portion of the machinery at each throw of the shuttle. This was effected by the contraction of the extensor indicis. Now the power to elevate the index with sufficient force to lift this weight had been failing in this man for the last eighteen months. He was able to work for a time as usual, but in half an hour or so the finger was thoroughly fatigued, and he was compelled to repose. By alternate periods of work and repose he was able to do about a quarter of a day's work.

The grasp of the hand was powerful, and there was no alteration of sensation. On uncovering the forearms no difference was perceived. No doubt this arose from the small magnitude and deep position of the extensor indicis, but the nature of the case was rendered clear by its perfect analogy with corresponding ailments in writers, tailors, and other artisans, in all whom the atrophy falls on the muscles most used.

These cases of muscular atrophy from excessive work, form a very well marked group, easily recognized, and not uncommon. Their pathology and mode of production appears plain. The fatigued muscles suffer in their nutrition from want of due repose, and become a prey to fatty and granular degeneration of their fibres. There is no tendency to the extension of the disorder to the muscles of the trunk because the exciting cause has only a local operation. If the disease be seen early, perfect rest of the injured muscles will generally suffice to bring about restoration, but if the atrophy have existed a twelvemonth or more the case is well nigh hopeless; and even, if seen early, I have never been able to obtain success in treatment unless the patient has altogether renounced the particular work which had produced the disorder. Unfortunately it is seldom that an artisan can do this; the support of his family depends upon him, and he persists in the labor that is slowly but surely undermining all his usefulness. The best advice to give such a patient is to change his occupation at once. The Middleton weaver above-mentioned, acting under my suggestion, became a gardener, and is now doing well in that capactity. One of the tailors turned letter carrier, and he congratulates himself on the change, which appears not unlikely, if the progress he has since made continues, to lead to a complete restoration of his hand. A writer should be recommended to accustom his left hand to do the work of the right, so that the latter may rest.

A considerable number of cases of wasting palsy are produced by cold and wet. These also form a concise group, which some observers have wished to set apart under the designation of "rheumatic form of muscular atrophy." The invasion of the complaint when thus caused is often somewhat sudden, and the wasting is accompanied by cramps, twitches, and severe neuralgic or rheumatic pains; but these peculiarities scarcely warrant a separation into a distinct species; for some cases that set in with the so-called rheumatic complexion, subside soon after into the ordinary form. The history of the groom, whose case I described in the foregoing part of this paper, betrays much of the rheumatic nature. He suffered from neuralgic pains throughout the whole of his illness, yet it does not appear that cold or wet had any immediate share in producing the atrophy in the thigh. On the other hand the coal miner, whose hands were atrophied, although the members were almost constantly immersed in water, never suffered pain during the four years that his complaint had endured.

The frequency of excessive muscular exercise, and of exposure to wet and cold as determining causes of partial wasting palsy, explains why the great majority of such cases occur in the male sex. In ten cases of this sort that I have seen, only two were women; one a domestic servant and the other a factory hand.

Wasting palsy has sometimes been known to be consecutive to other disorders. The boy whose case was related first, had an attack of infantile paralysis previously to the setting in of the wasting palsy. An old pupil brought me a child about three months ago, in which the left upper arm was excessively wasted, with good preservation of the forearm and hand. The history of the case pointed unequivocally to infantile paralysis of the whole limb as the first disorder. The forearm and hand recovered in a few months, but the muscles of the upper arm underwent a gradual atrophy until they had been completely destroyed.

It is well known that acute diseases are sometimes followed in the course of convalescence by partial or total paralysis of a very inexplicable nature. Typhus and typhoid fever, dysentery, cholera, and diptheria, the three last especially, have furnished frequent examples of such paralysis.

A very curious circumstance in the history of wasting palsy is its disposition to run in families. There has been published an account of at least ten families in which the disease has appeared hereditary. In four of these it was confined to two brothers in each. Another family, whose history has been supplied by Dr. Meryon, had four boys affected, and there were eight healthy sisters. In another family mentioned by him all the boys, namely two, had wasting palsy, whilst the two sisters were sound. A sea-captain mentioned by Aran had lost two maternal uncles and a sister from the disease, but two other sisters and three brothers continued healthy. In a later instance recorded by the same observer the patient's two aunts had died of general muscular atrophy. In a family known to Oppenheimer two uncles and a cousin of the patient were already deceased, while another cousin and two brothers still suffered from wasting palsy.

Altogether, these ten families included twenty-nine individuals struck with wasting palsy, and of these only four were females. This great preponderance of males is quite inexplicable. It cannot depend, as in the previous case, on the greater exposure of one sex to the common exciting cause,—cold, wet, and hard work,—because in the hereditary cases the disease frequently appears in early youth or childhood, long before the sexes are unequally subjected to fatigue and exposure.

Cases of hereditary origin have another peculiarity. In nearly all of them the wasting spreads eventually to the entire muscular system, consequently they tend to a fatal termination, and offer but a small chance of recovery. Such cases are not, however, absolutely hopeless. I have recent information that, in the family mentioned by Dr. Meryon, although the three eldest sons have died, the fourth has every prospect of surviving, and for more than four years has exhibited a steady improvement.

Wasting palsy is essentially a chronic disorder. We measure its advance by months and years. Some cases complete their history in six or eight months, others linger for many years. I found the mean duration of a considerable number of cases to be a little over three years.

The disease may terminate in one of three ways, namely, in recovery, permanent arrest, or death. The second mode of termination occurs when the wasting of the muscles ceases, and the limb continues for an indefinite period in its maimed condition, neither amending nor deteriorating ; the muscles, which are entirely destroyed, do not reappear, and those which are only partly consumed continue to exercise their feeble powers under the control of the will, but do not regain their former bulk or vigor. This stationary condition being once ushered in by the arrest of the atrophy, the disease may be said to have reached its ultimate term, and the skeleton-like footprints it leaves behind are to be regarded not as the malady itself, but, like the scar of a healed-up wound, only as the commemoration of a morbid activity which has now altogether passed away.

Generally speaking, when the disease has fairly entered on the stationary phase, and has continued so a year or two, there is very little danger that it well resume its active career. Individuals have lived twenty and even thirty years with their crippled limbs unaltered. There are cases, however, where the malady, after lying torpid for years, has awakened to new activity. Aran has related three interesting examples. One was a woman who, when a child, had atrophy of the muscles of the right hand, from which she recovered completely in her twelfth year. When forty years of age she was attacked again in the same place. In another instance, the right leg became the subject of wasting palsy, but gradually recovered. Sixteen years after the shoulders were seized, and the disease involved both upper extremities, and several muscles of the trunk. In a third case, the right leg was the seat of debility and atrophy. After remaining quiescent for eight years, the disease started into fresh activity in the left leg and right arm.

On the question of the nature of wasting palsy and its true pathology, opinions are divided under two suppositions. Some suppose that the seat of the disease is in the nervous centres, and that the muscles are affected through their nerves, while others, and I reckon myself of the number, consider the muscles as primarily affected. I will not weary the reader with a discussion at length on this point, but must refer those who are curious on the subject to my essay, where the question is fully debated. I may, however, shortly state the results of *post-mortem* examinations where the disease has proved fatal. The wasted muscles have always, of course, been found diseased; usually there has been found fatty degeneration of the primitive fibres. In other cases the fibres have simply withered away until nothing remains but the empty sarcolemma, and, at length, even this disappears. The two conditions may be found together in the same subject. The muscles of the lower extremity appear more prone to the fatty change, while those of the upper extremity more frequently suffer simple atrophy. Hence the wasting is a more conspicuous symptom in the latter than in the former. The muscles in the calf have been known to be completely changed to masses of fat, without any material change of shape or bulk.

The state of the brain and medulla oblongata has invariably been that of perfect health. In nine out of thirteen autopsies of cases of general wasting palsy the spinal cord was sound, but in the remaining four there was softening or degeneration. Cruveilhier found, in two cases, atrophy of the anterior roots of the spinal nerves, and this has been found since in two instances. In five other cases, where this peculiarity was especially searched for, it was not found; on the contrary, the anterior roots possessed their usual size, and showed no sign of degeneration.

The nervous branches, which supply the wasted muscles, have been examined in a few instances. Cruveilhier and Virchow found the muscular branches much atrophied. Laboulbene, however, found no change in the peripheral branches, and Mr. Partridge, who examined one of Dr. Meryon's cases, states briefly that the tendons and nerves were unchanged. Amid this conflict of evidence, it is impossible to come to a certain conclusion regarding the pathology of the disease, but the weight of evidence inclines very strongly to the belief that the muscles are primarily affected, and that the morbid changes sometimes found in the several parts of the nervous system are secondary.

Wasting palsy is especially liable to be confounded with lead palsy and reflex paralysis, especially the essential paralysis of infancy and childhood. Lead palsy is distinguished by its comparative sudden invasion. In a day or two, or a fortnight at the most, lead palsy has reached its height, and the muscles assailed are reduced to complete immobility, whereas, in wasting palsy, the waning strength keeps pace with the gradually decreasing volume of the muscle Again, the precursory symptoms of lead palsy are very marked. These are colic, anæsthesia, tremblings of the limbs, general dyscrasia, undue mobility of the emotions, especially the depressing ones; in fine, all those anomalous symptoms and conditions embraced by the term lead cachexy. It is also usually easy in such cases to trace very distinctly the entrance of lead into the system.—*London Medical Review*, Dec. 1860.

THE TREATMENT OF FALSE ARTICULAEIONS BY PERIOSTEAL AUTOPLASTY.

The method to which M. Jourdan has given the name of Periosteal Autoplasty, consists essentially in the oblique resection of the two fragments between which the false joint has been formed, after having detached the periosteum, either upon the two portions, or upon the upper fragment only; one or more clefts are then made in the periosteum, into which slips of the periosteum covering the other fragments of bone are inserted, and the lips of the clefts are brought together by sutures, or the delicately constructed forceps called *serrefines*. The edges of the wound in the soft parts are then incompletely brought together; and, finally, the limb is maintained in a state of perfect immobility, for as long a time as is necessary, in an appropriate apparatus.

This operation has fully realized M. Jourdan's expectations in the cases in which he has tried it, a circumstance which will be fully understood if we bear in mind the important part which is played by the periosteum in promoting the union of a bone after its fracture.—*Ibid.*

Dr. Rufz, Director of the Garden of Acclimatization, established at Boulogne, has presented to the Academy numerous parasites found in foreign animals. A leech found in the throat of a black stork; a tænia in the intestines of an ostrich, an animal which, according to Buffon, was free from parasites, etc.—*Med. Times & Gazette.*

PART IV.—BI-MONTHLY ABSTRACT.

SURGERY.

Morbus Coxarius — Sayre's Method of Treatment. By Wm. K. Cleveland, M.D. (American Med. Times, Jan. 5, 1861.)

Dr. S. discards completely the long-advocated and popular notion that morbus coxarius is of *necessity* connected with tubercular degeneration of the joint, and regards it strictly as a dfficulty, and treats it as such. The unparalleled success attending this recently adopted mode of treatment is beyond a doubt attributable to this view of the subject. But if the patient be laboring under a depraved and vitiated condition of system, constitutional remedies are of course employed for the removal of this condition. Morbus coxarius is invariably preceded by inflammatory action within and around the joint, which inflammation is traceable, however obscurely, to some traumatic origin. For a more complete description than my present space will allow, of the varied results of this synovitis, or periostitis, and the appearance the limb presents in the several stages of the disease, the reader is referred to Dr. S.'s report (Am. Med. Ass.), in which the entire matter is freely and lucidly explained. The great object aimed at in Dr. S.'s treatment is that which is indicated in every variety of articular inflammation, viz., rest, and the removal of the cause of irritation. This object is effected in various ways, the treatment being adapted to the particular stage of the disease.

In the great majority of incipient cases of morbus coxarius, which stage of the disease is not characterized by any very marked malposition of the limb, as well as, in very many cases advanced to the second stage, which is characterized by depression of the pelvis of the affected side, with eversion and *apparent* elongation of the limb, all that is necessary to effect a perfect cure is the use of Dr. S.'s splint for hip disease, which is presently to be described, together with its mode of application. If, however, the effusion that always occurs within the capsular ligament in the second stage of the disease, is excessive and persistent under the application of leeches, iodine, cold, etc., as is too often the case, the joint must be opened, either by puncture with the trocar, or by free incision. And this operation is more imperatively demanded if the effusion is suspected to be of a puriform character. In addition to this, the tendons of all firmly contracted muscles are divided subcutaneously. The second stage of the disease is marked by the most exquisite sensibility. Pressure upon the trochanter major, or at any point that will bring the caput femoris forcibly against the acetabulum, produces extreme suffering, which suffering is again instantly relieved by removing the pressure from the joint. The third stage of the disease is recognized by its presenting symptoms diametrically opposite to those of the second stage. The pelvis on the diseased side is unnaturally elevated, sometimes normal; the thigh is flexed upon the pelvis, and the limb, instead of being *everted* and abducted, as in the second stage, is *inverted* and adducted, and there is comparative freedom from pain. The operations required in this stage of the disease consist in the division of the contracted muscles, the breaking up of bony anchylosis, if any exist, and in extreme cases the resection of the head of the femur, together with, in some cases, the neck, trochanter major, and a portion of the shaft of the bone, as well as all necrosed or carious portions of the acetabulum.

But to be more explicit, the method of treatment employed in the different stages of the disease is as follows:

Treatment in the First Stage.—Two straps of strong adhesive plaster, cut slightly tapering from above downwards, broad enough to almost envelop the limb, and of sufficient length to extend from two or three inches below the trochanter, to within as many inches of the malleoli, are placed along the internal and external aspect of the limb. To the inferior extremities of these lateral straps are attached two pieces of strong webbing, an inch wide, and long enough to be united a few inches below the foot. These straps are carefully adjusted to the part, and secured by the application of two or three narrower straps, carried spirally around the limb, and a roller extending from the toes to the pelvis. The webbing is not to be confined by the circular straps, nor by the bandage, but left free, for the attachment of the splint during day, and counter-extension during the night. The leg being dressed in this manner, is allowed to remain undisturbed for a few hours, in order that the plaster may become firmly adherent to the skin. After which Dr. S.'s splint is applied. The splint is manufactured by Messrs. Ford and Wade, No. 85 Fulton street, and consists of two narrow bars of steel, that play upon each other at the knee in such a manner as to permit of shortening and extension, which is graduated at pleasure by means of a ratchet or screw worked by a key. The instrument extends from the crest of the ilium to within a couple of inches of the external malleolus, and is so constructed as to accommodate itself to the curvatures of the limb. A perineal band of firm rubber tubing is connected with the upper extremity of the instrument by means of a strong catgut, which works through a pulley, which pulley is sustained at the superior extremity of the instrument by a ball-and-socket joint. At a point corresponding with the knee is placed a knee-cap, which assists in securing the instrument firmly to the limb. At the inferior extremity are attached a small pulley and buckle. The instrument thus briefly described is the splint used by Dr. S., the employment of which has been attended by more favorable results than that of all other instruments combined in the treatment of this hitherto formidable disease. The splint is applied in the following manner: The perineal band being carried well into the groin is secured by means of the catgut to the small pulley at the upper extremity of the splint, the knee-cap is buckled snugly over the knee, and the webbing connected to the external adhesive strap passed over the small pulley, and secured by the buckle, mentioned above. The splint being thus adjusted, extension is readily effected by means of the ratchet or screw. In this manner all contact between the inflamed articular surfaces is prevented, while the motion of the joint is unaffected. The weight of the body is removed from the joint, and transferred to the limb below.

The splint is worn, as a general thing, during the day only; but in order that the joint may have the benefit of continuous extension, the following treatment is substituted during the night: The splint being removed, the two pieces of webbing are united below the foot. To this webbing a cord is attached, which, passing over a pulley at the foot of the bed, is connected to a weight, from four to eight pounds, which it suspends, and which acts as the extending, while the patient's body acts as the counter-extending force. Should the extending force require to be considerable, and more than the body of the child can successfully oppose, the foot of the bed is elevated to any desired angle, thereby adding the force of gravitation to the already existing counter-extending force. All irritation being thus effectually removed from the joint, an opportunity is afforded for a return to its healthy condition, which usually takes place in the course of a few months.

Treatment in the Second Stage. — This consists in effecting the re-absorption of the effusion within the joint by medical agents, if possible, and in overcoming by means of the weight and pulley, the resistance of the contracted muscles. But if these objects cannot thus be effected, the tendons of the contracted muscles are divided subcutaneously, when at once the limb may be made to assume its normal position, except in cases of extraordinary effusion, when it becomes essentially necessary to puncture the joint. For the performance of this operation and its subsequent treatment, the reader is again referred to Dr. S.'s report, already mentioned. After the operation the limb is dressed in the manner already described, the patient placed in bed, and the extending weight at the foot of the bed attached to the webbing, cold water dressing is applied to the wounds, which, with rest and care, heal usually in the course of a few days, after which the patient is ready for the application of the splint.

Treatment in the Third Stage. — This is of a more complicated and serious character. It consists in making an incision about six inches in length directly over the great trochanter and in a line with the shaft of the femur, in disarticulating the head of the femur, and in removing such portions of it, as well as of the acetabula, as are found in a dead or non-viable state. In order to accomplish this, not infrequently firm, bony adhesions require to be broken up. The patient is then placed, for a time, in Dr. Bauer's "wire breeches," an apparatus that combines perfect rest with extension, the two great objects desired at this stage of the treatment. The wound is filled with lint, treated with the water dressing, and allowed to granulate from the bottom. It is desirable, while the patient remains in this wire apparatus, that he be removed therefrom occasionally, in order that passive motion of the knee-joint may be made, thereby preserving its healthy tone. When all inflammatory action has subsided, and the wound is closing kindly, Dr. S.'s splint may be applied and the patient be allowed to go about. In order to set forth the *results* of this mode of treatment, I will give the reader the notes of two or three cases which I have recently taken.

Case 1. *First Stage of the Disease.* — E. F., aged 7 years, male, while sliding upon the balusters of the stairs about the first of October last, received a fall that inflicted an injury upon the right hip. The child complained at the time but little, and the matter was considered trifling. The next morning, however, the child experienced an increase of pain upon any attempt to use the limb. He evinced an unwillingness to walk about, and when he did so, would allow the ball only of the right foot to touch the floor. From this slight injury, as a starting point, the disease began at once to develop itself. The sensibility of the joint increased daily; so much so, that in the course of two weeks from the date of the injury, the little patient's health began to be seriously impaired. He slept badly at night, frequently waking and crying out with pain. The position of the limb, considering the brief time that had elapsed, was considerably affected, and afforded strong evidence that the disease was rapidly merging into the second stage. Dr. S. was called to see the patient when in this condition, two weeks subsequent to the infliction of the injury. The nature of the disease was at once determined; the child was placed in bed, the limb dressed with the adhesive straps, and the extending weight at the foot of the bed employed; leeches and cold water were also applied to the joint. This treatment was pursued two weeks, at which time the pain in the joint was so far diminished that the use of the splint was advised. It was accordingly applied, and the patient permitted to go about. Since the day the splint was put upon the little fellow, his improvement has been rapid and continuous; and at the present date he is so far recovered that the joint admits of every variety of pressure and motion with entire impunity.

Case 2. *Second Stage of the Disease.*—M. L., male, aged 8 years. When five years of age, complained of pain in the right knee; the family physician regarded the symptoms as referable to what are vulgurly known as "growing pains." But the pain increasing and the case growing more aggravated, a more careful examination was made, when it was discovered that the difficulty was confined to the hip-joint exclusively, there being no lesion whatever in connection with the knee. The child was now confined to bed, and for three months treated with rest, iodine, and friction; at the end of which time he so far recovered as to be able to walk about, not however without more or less pain and lameness, especially after any severe exercise. By constant and careful attention the child was kept in pretty much this condition until about nine months since, when, without any ascribable cause of a traumatic character, the symptoms again became intensified: so much so, that the physician in attendance recommended that the child be taken to the College of Physicians and Surgeons, in order that a more thorough investigation of the case might be had. This suggestion was acted upon by the friends, and a very careful examination was made by Prof. P., who pronounced the disease morbus coxarius, and advised that it be treated by issues. About a week after the examination, Prof. P. placed a nitric acid issue behind the trochanter major, which continued to discharge some six weeks, when it was permitted to close; cod-liver oil was also prescribed. The issue and the oil appeared to afford slight relief only. At this time Prof. P. called Dr. S. to see the child with him, and recommended the application of his splint, which was applied. On the 21st of June, the child was brought to Dr. S.'s office for the first time since the employment of the splint. The mother complained that he ran all about town, to fires, etc. The child walks in the instrument with great freedom. Of course the splint does not permit of perfect motion at the knee, and the only appearance of lameness the child now presents is owing to the restricted motion of the knee-joint. His appetite is good, and he sleeps well without any pain.

This case is rapidly progressing to a perfect cure.

Case 3. *Second Stage of the Disease—Recovery.*—G. R. McD—, aged 7 years, male, came under observation, October 25, 1860. The friends state that he has generally enjoyed very good health, having been remarkably exempt from the various diseases incident to childhood. There is hereditary predisposition to phthisis on the mother's side, she having had a sister afflicted with curvature of the spine, and who died of pulmonary consumption. His mother informed me that in the beginning of January last he first complained of pain in the *knee*, especially at night, and that he has never complained of pain in the hip, but always referred it to the knee. The pain continued to increase, and after a few weeks the mother observed a very marked distortion of the affected limb, with partial curvature of the spine. The pelvis on the diseased side was depressed, the knee flexed, the leg abducted and *apparently* elongated. A physician was now called, who pronounced the disease rheumatism, and treated it with liniments and the anti-rheumatic remedies, without obtaining the slightest relief. In August last, he was seen by another physician, who, upon examination, found the disease to be connected with the hip-joint. Under this gentleman's care, he was treated with electricity and the medicated bath, but to no purpose.

On the 25th of October, the patient was brought to Dr. S., who at once discovered well marked evidence of morbus coxarius in the second stage, far advanced. On the following day the child was placed in bed under the extending force previously described, hoping thereby to remove irritation and restore the parts to their normal position without resorting to the knife. But the muscles were so rigidly contracted, and had been in this condition so long, they were found to be unyielding even under a quite forcible extension. Dr. S., therefore, chloroformed the patient, divided the contracted muscles, and reduced the limb to its natural position. Extension was again applied, for which the splint was submitted in the course of a few days; and to-day the patient may be regarded, although he yet walks in the splint, as beyond the influence of the disease.

Case 4. *Third Stage of the Disease—Exsection—Recovery.*—C. M., aged 5, female, had enjoyed good health until May, 1859, when she contracted pertussis, which continued three months, and under which her general health was observed very much to suffer. In June, one month after the occurrence of the whooping-cough, she for the first time complained of pain in the left knee, and gave evidence of a slight degree of lameness. These symptoms were not referable to any *known* traumatic cause, the cause in this case being doubtless so slight and obscure as to pass unnoticed by the friends. And, as this child is evidently laboring under the strumous diathesis, we can readily conceive of a slight cause as the source of the difficulty under consideration, her previous immunity from disease notwithstanding. This condition of things continued, at times better and again worse, until November, when the symptoms became so intense and aggravated, she was necessarily confined to bed. She suffered much pain at this time in the hip as well as in the knee. Hectic fever now set in, with colliquative night-sweats, followed by anorexia and emaciation. The parts about the hip were tumid, hot, and extremely sensitive. Three openings were made by the attending physician, from which pus was evacuated. The discharge was profuse, and afforded much relief. Sinuses formed in connection with these openings that continued to discharge pus, up to the 16th of August, at which time the patient was brought to Dr. S., who found the most marked evidence of advanced hip-joint disease, the limb being drawn up and fixed in that position so characteristic of the third stage of morbus coxarius. The sinuses above-mentioned were situated one behind the trochanter major, leading to the joint, the second about three inches below, passing up to the joint upon the anterior aspect of the femur, and the third connecting also with the joint opened upon the inner and posterior aspect of the limb, just below the trochanter minor. The joint being thus so seriously involved, it was deemed advisable to attempt a cure by exsection. Accordingly, the child being anæsthesiated, the bone was exsected through the trochanter major. The entire head, together with the major part of the neck of the femur, was absorbed, and an abscess was found in the great trochanter. Portions of the acetabulum were found to be carious, and removed. A large collection of cartilaginous or semi-osseous deposit was removed from the neighborhood of the acetabulum—matter thrown out evidently with the intention to effect in time the anchylosis of the joint. The patient was now placed in the wire breeches of Dr. Bauer, a portion of them being cut away to facilitate the dressing of the wound. The night after the operation, she slept well, without an anodyne, and so continued to do. Her appetite increased, and marked evidence of general improvement at once appeared. While in this wire splint she was occasionally taken out for the benefit of out-door air. In seven weeks after the operation, the wound was closed, and the patient sent to her home in the western part of this State. Letters recently received from the parents announce that she has gone on from good to better; and that she is to-day, what their most ardent hopes, a few months since, dared not to picture.

Strangulatud Inguinal Hernia, successfully treated by Large Doses of Opium. By O. M. Doyle, M.D., of Walton's Ford, Pickens, S. C. (Amer. Jour. of Med. Science, Jan. 1861.)

On the 24th of July, 1860, I received an urgent call to see a negro man belonging to a gentleman near by, on the "Georgia side." On my arrival I found the patient very prostrate; pulse frequent, skin clammy, and covered with cold perspiration. I was told that he had been engaged as a laborer on a railroad, *thirty-seven miles* from home, and that he had had a "swelling in the groin" for eight or ten days. Three days previously to my seeing him he had become unable to work, and his employers had sent him home. He had been two days making the journey, being compelled to stop frequently from sick stomach. He had vomited blood several times, and had not evacuated his bowels for three or four days. Examination showed him to be suffering from strangulated hernia.

Taxis was resorted to without success, and then the means usually recommended, as nauseants, warm baths, venesection, etc., were tried with the same result. I then had the patient placed on his hands and knees, and employed taxis, but with no better effect.

I then had him supported in a vertical position, with his feet upward, in order to have the advantage of gravitation, and once more employed taxis, but again I was doomed to disappointment. He was now sinking rapidly, having had stercoraceous vomiting several times.

It now seemed to me that an operation afforded the only chance of relief, and I asked for a consultation. Accordingly, Dr. T. S. Miller, of Retreat, S. C., was sent for. While awaiting his arrival, I gave the patient opium with a double object. 1st. To support and keep him quiet. 2d. I had seen a case reported in which it had induced sufficient relaxation to admit the hernia to be reduced. I administered two-grain doses of pulv. opii every two hours, until three portions were given. He was then becoming stupid, and was allowed to remain perfectly quiet, after flexing the thighs, and having him warmly covered with blankets. He remained in this condition about an hour and twenty minutes. His respiration was then becoming very slow, and almost stertorous. He now made a sudden start to move, and I heard, very distinctly, a sharp slapping sound. I then removed the covering, and examined for the tumor—it was gone.

A quantity of strong decoction of coffee—a moderately antiphlogistic course of treatment for a few days—and the proper adjustment of a truss, constituted the after-treatment.

I shall use opium in the next case.

Vesico-Vaginal Fistula—Operation—Cure. By Pliny A. Jewett, M.D. (Amer. Med. Times, Dec. 1, 1860.)

Mrs. H., aged about 30 years, of a highly nervous temperament, had suffered severely in two previous labors, in both of which it was necessary to resort to the use of forceps. In her third labor she fell into the hands of an irregular practitioner (homœopathic). Her labor was very protracted, the head of the child remaining impacted in the cavity of the pelvis for a period of *four days*. During this time she passed no urine; and, of course, the bladder must have been enormously distended. A few hours after the labor was finished the bladder gave way, and the urine passed off by the vagina in a gush. From that time no urine was passed by the urethra, but continued to dribble from the opening in the bladder. Upon an examination, between two and three months after the accident, an opening was found the size of a quarter of a dollar, nearly circular, but slightly oval, the long diameter being transverse. This opening was situated between the neck of the bladder and the uterus: the posterior boundary of the opening being the neck of the uterus. The bladder and the edge of the fistula were in a healthy condition. With the assistance of Drs. Beardsley and Pinney, of Birmingham, and Dr. Townsend of New Haven, I performed the operation advised by Dr. Sims. The patient was placed upon the bed in the position recommended by Dr. Sims. After she was fully under the influence of ether, the Sims' speculum was introduced, and the parts brought fully into view. The edges of the fistula were thoroughly excised with the long straight bistoury, and with great difficulty the mucous membrane of the neck of the uterus was removed at a point corresponding with the anterior edge of the fistula. As soon as the slight hemorrhage had ceased, the edges of a portion of the fistula were brought together with two *silver sutures*, and the remaining portion was attached directly to the neck of the uterus by carrying the needle into the substance of that organ. The sutures were applied without the clamps or shot, the wire being simply twisted upon itself. They were allowed to remain a period of twelve days. At that time they were removed, and perfect union was found to have taken place. The Sims' catheter was used and found to be invaluable. It answered the purpose intended most perfectly. The bowels were kept quiet by the administration of opium. One week after the removal of the sutures the bowels were moved by an injection. This was followed by a severe attack of cholera morbus, attended with severe vomiting and purging, which resulted in the detachment of that portion of the fistula attached to the neck of the uterus.

A few weeks after this accident the operation was repeated, and resulted in a perfect closure of the opening. The patient was kept under the moderate use of morphine after both operations. Two weeks after the removal of the sutures used in the second operation, the patient was able to pass her urine without the aid of the catheter. The sutures caused no irritation whatever, and were removed without difficulty. I have used the silver sutures in a great variety of operations for some time past, and have found them to answer the purpose intended better than any other. I have used them in amputation of the extremities and of the female breast; in the extirpation of tumors; in operations upon the eyelids; in hare-lip; in wounds of the abdominal parietes; in the operation for phymosis; in lacerated perineum, etc., etc. I consider them a most valuable contribution to practical surgery.

A Case of Ovariotomy. By HENRY MILLER, M.D., Louisville, Ky. (North American Medico-Chirurgical Review, Jan. 1861.)

In a paper read before the College of Physicians and Surgeons of Louisville, and published in the *American Journal of the Medical Sci-*

ences for April, 1859, I gave an account of two cases of cystic ovary successfully treated by excision, and attempted to justify the operation of ovariotomy under certain circumstances. Having recently had another successful case, I now propose to present a brief notice of it.

Mrs. T., forty-eight years of age, consulted me on account of a multilocular degeneration of the left ovary, which attracted her attention as a tumor upwards of a year since, but she had complained of pain in the left iliac region and limb of the same side for several years previously. The tumor, when she came under my observation, had grown to a large size, and invaded all the regions of the abdomen, not excepting the hypochondriac, and almost diagnosticated itself upon the surface by the prominence of the cysts and the depth of the sulci between them.

I operated upon her on the eighteenth of October, in the usual way, by making an incision through the linea alba from the umbilicus to within an inch of the pubes. This brought to view the main cyst, which was punctured, and its fluid contents received in a vessel. The superior cysts were then pressed down by an assistant, and held opposite the abdominal opening, and their fluid collected. Several smaller cysts were opened and their contents allowed to escape at random. After all this depletion the solid textures of the tumor could barely be brought through the incision. The collected fluid measured twenty pints, and the solid remnant of the growth, which was extracted, weighed eight pounds. Allowing that only two pounds of fluid were not collected, which was the lowest estimate made by those who were present, the tumor must have weighed thirty pounds before it was molested.

It was my purpose to have secured the pedicle with the clamp, proposed by Mr. Spencer Wells, but when I observed how large was the main artery supplying it, and how deeply its tissues were congested, I concluded that it would be safer to use a strong ligature of flax, and to secure the artery by a special ligature. The clamp was then applied, with the view of retaining the stump exterior to the cavity of the abdomen, and in this respect only did I depart from the method pursued in my two previous cases. If, when the pedicle is left in the abdominal cavity, the suppuration and sloughing are equal to what I observed on the outside, and there is no reason to suppose that there is any difference, then I am disposed to think that it would be always better to proceed as I did in the present case, for there must be danger when the pedicle is left within the body, not only of peritonitis, but of purulent absorption.

The sloughing was not completed until the twentieth day after the operation, when the remnant of the stump was not larger than a cherry, and was retracted within a deep depression, looking like the umbilicus of a newly-born child.

The external incision was closed with the interrupted suture of annealed iron wire, and the union was firm and complete in seven or eight days. This was the first time that I had used metallic sutures, and I was not very favorably impressed by them. There was fully as much suppuration along their track as I have been accustomed to see, when sutures of silk or flax were employed, and there was, moreover, a small abscess formed in connection with the suture, next to the umbilicus. This might have been, however, only a coincidence, and I do not feel authorized to decry what others have so much lauded, judging from only a single observation.

No threatening symptoms followed the operation. There was no shock, no tenderness or fullness of the abdomen, nor any fever. Her appetite continued good enough throughout. Her pulse ranged from eighty to ninety in the minute; she slept well, and complained only of a little backache, and some pain in the left leg, which readily yielded to a liniment of chloroform. During the fourth week she sat up several hours every day, and walked about the room, and just one month and a day after the operation she returned home, making the journey in one day, partly by rail, and partly by riding in a carriage thirty miles, without inconvenience of any kind.

It is hardly necessary to add that Mrs. T. was placed completely under the influence of chloroform, preparatory to the operation. To the immunity from suffering and consequent shock, thus purchased, I ascribe, in no small degree, the fortunate issue of this, as well as my two previous cases. No consciousness of pain was evinced by her except from the sewing up of the external wound, and she afterward declared that she felt no pain from any thing else that was done.

Popliteal Aneurism — Digital Compression — Ligation. (The Medical and Surgical Reporter, Nov. 17, 1860.)

The following case, occurring in the service of Prof. Gross, at Jefferson Medical College, affords a good illustration of the difficulty attending the treatment of aneurism by the much-vaunted method of digital compression:

"The patient is a negro man, 38 years of age, a barber. Nearly two years ago he discovered a small pulsating lump or tumor in the region above named. It excited but little notice at first. At length, however, it became larger, mechanically causing flexion of the leg, and was also the seat of much pain. Two weeks since he entered the hospital of the College for treatment.

"Digital compression was kept up for four and a half days without cessation, and the patient was given acetate of lead, opium, and veratrium.

"The compression was at the femoral artery, where it passes over the pubic bone. The patient being somewhat exhausted by the compression, although it was progressing favorably (for the tumor had decreased very much in size and was much denser), the compression was discontinued. For the relief of the aneurism, Prof. Gross ligated the femoral artery about 4½ inches below Poupart's ligament, just at the point where the sartorius muscle crosses the artery. The incision was made about three inches in length. The patient being fat, it was made long to allow for access to the vessel. After reaching the artery and clearing it of the vein and nerves, an aneurismal needle, armed with a ligature, was passed under from within outwards. It was then firmly and carefully tied. The patient was ordered a good diet."

Herniotomy: a portion of the Ileum and ascending Colon, Cæcum with its appendix, and a large volume of Omentum returned from the Sac ; patient recovered with scarcely an unpleasant symptom. By PAUL F. EVE, M.D. (Nashville Journal of Medicine and Surgery, January, 1861.)

The following case occurred in Dr. Eve's clinic on the 22d of last October:

"The patient was a stout negro man, about 27 years old, and had been wearing a truss for some time. It is probable he has had hernia for years, and that a portion of the contents of the sac was irreducible. There was now a volume nearly as large as a fœtal head at full term, down into the right scrotum, which Dr. B. and myself utterly failed to replace after a faithful trial, using anæsthetics, etc., for one and a half hours.

"At 2½ P. M. operated, the class present. Made an incision about eight inches in length over the herniary tumor, and opened the sac, when serum pretty highly colored, freely escaped, and then a large quantity of the omentum rolled out. The lower portion of the ileum, with the ileo-cœcal valve, the appendix vermiformis and all of the cœcum, and several inches of the ascending colon, were traced out and distinctly recognized in the sac. It required incisions at its neck to be repeated no less than four times, and then only after careful and persevering efforts could the extruded organs be returned into the abdomen. The large wound was closed by silver sutures — one being passed through the neck of the sac — and adhesive straps.

"The patient vomited freely during the progress of the operation, which of course embarrassed and delayed its performance. He was allowed cold water, a mustard poultice was applied to the abdomen, and from one-half to one-grain doses of morphine were prescribed every three or four hours. It was thought by many that he would not recover.

"23d. Called at 3 A. M.; found patient had some distress like cramp colic, in the gastric region, and which was promptly relieved by paregoric, laudanum and whiskey. 8 A. M., prescribed 2 ℥ sulphate of magnesia, 1 ʒ nitrate of potash in 8 ℥ peppermint water; dose, a table-spoonful every two hours. Doing pretty well to-day.

"24th. The bowels moved last night, although not more than one-fourth of the saline mixture had been taken. From this date the patient began to improve. His bowels moved spontaneously very freely at times, which was considered a favorable circumstance to prevent inflammation. There was never a symptom of peritonitis. The sutures were cut out the tenth day after the operation, and on the fourteenth the wound had healed. The soft pad of a truss with a weak spring was put on, and in a few days John was up and about the house.

"On the 8th of November, my attention was called to the sudden development of a large tumor in the left scrotum. It was a long, flattish enlargement, situated in the cord above the testicle, and in shape and size like the hand. I attributed it to the escape from the abdomen of the blood, serum and fibrin from the peritoneum down the cord into the scrotum. It diminished one-half in size in twenty-four hours, and is now scarcely perceptible. There is a hernia forming on this side, and a truss has been applied for it."

PRACTICAL MEDICINE.

Treatment of Inflammatory Affections of Female Breast. By W. H. Byford, M.D., of Chicago. (N. A. Medico-Chirurgical Review, Jan. 1861.)

After fully describing the character of these affections, Professor Byford comes to their treatmemt. He arranges that for inflammation of the nipples under the heads of prophylactic, palliative, and curative. The nipple must be prepared for its duties. The causes operating upon it produce abrasions, and their action is facilitated by the natural and acquired tenderness of the structures, particularly the epidermis and skin. Hence these must be hardened. The nipple should be covered lightly during pregnancy and nursing; the thinner and more permeable the covering the better. It should freely admit the air. At the same time the organ "*should be subjected pretty constantly to moderately rough friction.*"

An excellent dressing for the nipples for the last two months, is a rough, coarse sponge, so cut as to cover the areola ; surround and cover loosely, but touch every part of the nipple. Over this there should be but one thickness of clothing, so as to allow of the evaporation of fluid as fast as secreted, and the free admission of air. In cold weather, of course, the parts should be covered more when going out. The nipples should be occasionally moistened with water, and allowed to dry slowly; friction with a dry towel or the fingers will assist.

During the lactation, the same rules should be observed, and after nursing, the nipple should be wiped clean and dry before being covered. A little glycerin or olive oil will prevent cracking. When inflammation comes on, palliatives and curative measures are demanded. The healing process being continually interrupted by the performance of the functions of the organ, it is necessary to protect the part from the effect of these interruptions.

Artificial means are required, which intervene between the mouth of the child and the nipple. For this purpose the shield must be employed. This should be made in the form of a conical hat, having a rim, a crown cavity, with a draft tube rising out of the top for the passage of the milk. This rim should be large enough to cover the areola, the crown passing over the nipple, merely touching it on the sides. If the abrasions are on the summit of the nipple, the shield should be so deep that, when drawn, the top of the organ will not touch, or else it will cause pain. But if the cracks are on the side or base of the organ, then the cavity of the shield must be shallow, so that the top of the nipple touches its bottom in such a manner as to prevent any stretching, and to bring the pressure entirely on the top. In this latter case, the bottom of the cavity should be as smooth as possible, and correspond in shape to the summit of the nipple, in order to prevent unequal pressure. A soft linen rag, properly adjusted over the draught tube, is preferable to any other envelope.

M. Legroux mentions the following ingenious contrivance. He applies this mixture :

℞.	Collodion, ...	p. xxx ;
	Ol. Ricini, ...	p. ss ;
	Ol. Terebinth, ...	p. jss.

This is quite adhesive; and dries less quickly than collodion, on the areola, with a brush, so as to encircle, but not touch, the nipple for the width of an inch. While yet soft the nipple is covered with gold-beater's skin, which is pressed well down upon the mixture. Thus is formed a smooth and pliant covering. Holes are pricked through the skin with a needle, to allow of the passage of the milk. Before sucking, this must be moistened with sugar and milk. The curative means for sore nipples are various. The same will not do for abrasions as well as ulcerations. Nature is to be imitated by forming a cuticle for the part.

Abrasions may be covered with starch and mucilage. The following is a good mixture :

℞.	Cerat. Alb., ...	ʒij ;
	Ol. Amyg. Dulc., ...	ʒj ;
	Mel. Despum., ...	ʒss. M.

Dissolve with gentle heat, and add Bals. Canad. ʒijss.

Apply each time of nursing. When the cracks are deep, close them by pressing their edges together, and covering with collodion in a thick and wide coat ; this must be renewed when found necessary. When ulceration exists, it will be acute or chronic. Act as for this affection elsewhere ; deplete, if acute, by leeches, and apply cold emollient poultices ; or envelop the nipple in a thin layer of thick mucilage, covered by oil-silk, so as neatly to fit the organ, kept cold by ice applied in a bladder. When these remedies are not necessary, apply mucilaginous and bland ointment applications. Alum and tannin are good at first; sulphate of zinc and borax come next in respect to time. One scruple of tannin to one ounce of rose-water, five grains of alum, or sulphate of zinc, are useful in the early stages, when the acute symptoms are subdued.

The following are useful:

℞.	Sodæ Subborat,	ʒss;
	Glycerin,	ʒij;
	Aq. Rosar.,	f℥jss.
M.	Use as a wash after sucking.	

℞.	Sodæ Subborat,	ʒij;
	Cretæ Præp.,	℥j;
	Spt. Vini,	
	Aq. Rosar. āā,	f℥iij.
Mix and dissolve.		

The latter may be used when the ulcer is becoming indolent. In the chronic form strong astringents and stimulants become necessary. A skillful use of the sulphate of copper and nitrate of silver will shorten the course of these ulcers. The latter applied solid to the surface, not oftener than once in eight days, is excellent. In the interval the sore may be dressed with tannin or alum in solution. When irritable, an ointment may be used, made of belladonna, hyoscyamus, or opium. One very good expedient, which will often entirely change the character of the ulcer, is to anæsthetize the part with ice, as practiced prior to operating.

When the lymphatic glands become affected, antiphlogistic measures must be employed; and when chronic, alteratives, tonics, liniments, etc., according to the peculiarities of the case. The treatment of milk abscess is of great importance. It should be prevented if possible, by proper management at the outset. When the nipple is deficient, or from any cause, prehension is deemed impossible, it is decidedly improper to attempt nursing. In other cases, prolonged and judicious efforts should be made to render the organ useful. The first thing is to take perpendicular pressure off the top of the nipple, by some device to prevent the dress from forcing it in, and this, if possible, should be commenced early in pregnancy. For this purpose a shield should be employed, which will cause a pitting of the anterior surface of the breast, and a projection of the nipple. When called upon to treat a rudimentary nipple, after parturition, the effect must be more prompt. In many cases the organ may be made available by causing it to erect itself by simple titillation by the finger, and immediately applying the child; or by placing a thick layer of collodion, around it on the areola, which, drying, elevates the nipple. Then, by keeping the reservoirs empty, abscess is prevented. To aid in this we have various tubes and pumps, but all of which are objectionable. A puppy is often used, but it likewise is liable to irritate and excoriate the nipple. The only proper way is by the mouth of an adult, varying the pressure or force to suit the tenderness of the part.

A very useful class of measures are those to suppress the secretion, and thus relieve the distention, as opium in large doses, or applied as an ointment; but belladonna seems to have acquired most renown. Numerous instances are reported of its great value in such cases. Much depends upon its strength and application by inunction till the production of its characteristic effects upon the system. Cold, as a local remedy, is beneficial. The temperature of the breasts for this purpose should be kept steadily at about 40 or 45 degrees, as by water running through an india-rubber bag enveloping the organ, or the application of a bladder. No bad effects are to be apprehended from it. Internally, a saline cathartic may be given every other day, and two grains of iodide of potassium every four hours will materially assist.

Acute inflammation, the effect of congestion, is apt to be extensive, and will require energetic treatment. Warm fomentations may be applied for the first few hours with the hope of establishing the secretion of milk. A decided venesection will often turn the balance in favor of resolution. Immediately after this, the use of the veratrum viride may be commenced in doses of six drops every four hours, till the pulse is brought down below the normal standard, and then kept there. One grain of calomel, with a quarter of a grain of sulphate of morphia, may be given, if the pain is urgent, say every four or six hours. A lotion of one part of sulphuric ether to two parts of alcohol will be a good soothing adjunct, after the inflammation becomes permanent. These measures should not be abandoned for warm poultices until suppuration is clearly evident, by which plan we may often limit the extent of this process. In this state of the gland, the most moderate means only should be employed to draw the breast. Retained milk is not the cause of inflammation here, as in milk abscess. If glandular inflammation is complicated with that of the reservoirs, the treatment for both must be combined, as local and general antiphlogistics with means to arrest the secretion and empty the reservoirs. Chronic inflammation will be cured by treatment similar to that for other glandular inflammations, as leeches, mercurials, iodine, and vegetable alteratives, internally and externally. Much reliance can be placed upon well-regulated and graduated pressure with adhesive straps, pressing the diseased part against the ribs ; or with collodion thoroughly incasing the breast. When pus forms, evacuate it early, though where the abscess is deep, it is desirable to wait until the pressure from within has caused condensation of the overlying tissues, otherwise a large opening will be required. In milk abscess the earlier and smaller the opening the better. The effect of suppuration and evacuation of a milk reservoir is often to destroy its cavity, but in some cases a milk fistula is formed. This may be closed by an occasional application of the nitrate of silver. Worse than these are the tortuous lacunæ, that sometimes result from the deep glandular abscess of the breast, and which are generally very difficult to cure. Injection of iodine is most to be relied upon. This may be done by inserting a soft, flexible catheter to the bottom of the canal and throwing the injection through it so as to apply it without dilution to the bottom of the fistula. This favors the shallowing instead of the narrowing of the cavity. Of course it is never advisable to slit up these obstinate puriferous ducts, because of the amount of tissue that might be damaged, which it is desirable to save.

On Lactatics. By A. K. Gardner, M.D., Professor of Clinical Midwifery, and Diseases of Females, etc. (American Medical Times, Jan. 12, 1861.)

Professor Gardner proposes the name of Lactatics to designate the medicines influencing the elimination (*i. e.* the secretion and excretion) of the milk from the human breast, with the following classification :

A. Galactics. (Promoters of Lactation.)	I. *Galactagentia:* Inducers of Milk. II. *Galactagogues:* Expellers of Milk.
B. Antigalactics. (Opposers of Lactation.)	I. *Ischogalactics:* Arresters or Suppressors of Milk. II. *Phygogalactics:* Dispersers of Milk.

A. Galactics are agents promoting lactation ; they increase the supply of material to the secretory organs, directly or indirectly stimulate or excite the latter to increased activity, or promote the evacuation of the milk secreted.

I. *Galactagentia* are articles that tend to increase the quantity of milk secreted. They embrace :

1. *Liquid food*, including milk, good nutritious soups, ale or beer, and other malt liquors. Lager-beer is much inferior to ordinary ale in promoting the secretion of milk, and principally as it would seem from the effect of the pitch with which it is impregnated, and which acts so powerfully and immediately upon the skin and kidneys, creating such a secretion of perspiration and urine, that the tendency to the breast is thus neutralized. " *Spirituous* liquors, instead of increasing, as many suppose, diminish the quantity of milk secreted."

2. *Fœniculum.*—Hippocrates, as well as Galen, already speaks of fennel as a means of increasing the lacteal secretion. Dioscorides ascribes the same powers to it (lib. III. chap. lxvii. et seq.). According to Mitscherlich, also, it increases besides other secretions, certainly that of milk (Stillé's Therap. and Materia Medica, vol. 1, p. 592). In Germany, especially, it has been tried extensively and lauded correspondingly. It is given either alone as infusion ad libit., or combined with various other articles still to enhance its power. Among the most celebrated and valuable formula is that of Hufeland :

℞.	Sem. Fœniculi, ...	ʒi ;
	Flav. Cort. Aurant, ...	ʒss ;
	Subcarb Magnes., ...	ʒiij ;
	Sacch. Alb., ...	ʒij. M. ft. pulv.

Dose a teaspoonful three times a day.

I have obtained surprising results from Hufeland's formula, which I have employed in several cases, in one where the secretion had been suppressed for three weeks.

3. *Ricinus Communis* and *Jatropha Curcas.*—Castor-oil, as well as the leaves of the castor-oil plant, locally applied, has long enjoyed the reputation of promoting the mammary secretion. " It [Ol. Ricini] has been recommended as a local application to the breasts of nursing women to promote the secretion of milk." (Wood and Bache's U. S. Dispensatory, p. 517.) Dr. McWilliams mentioned in his report of the Niger Expedition (Lond. Med. Gazette, Jan. 1847), that the inhabitants

of Buena Vista (Cape de Verde Islands), are accustomed to provide a wet-nurse in an emergency, in the person of any woman who has once borne a child, and is still within the age of child-bearing, by continued fomentation of the mammæ, with a decoction of the leaves of the Jatropha Curcas. (The leaves were, in cases detailed, applied as poultices to the breast, and as fomentation to the vulva, for three days, at intervals.) These facts were in part confirmed by Tyler Smith (Lond. Jour., Oct. 1850), who speaks of the decoction of the leaves of Ricinus Communis, called Bofareira. More recently Dr. Routh (Brit. Med. Jour., Dec. 17, 1859) exhibited three preparations of castor-oil leaves, a tincture, a liquid (dose of each ʒj), and an extract (dose gr. v.). The leaves had been obtained from Australia. Dr. R. had given to lying-in women with deficient milk, the infusion in combination with Conger eel soup; and the effect in inducing a copious flow of milk is stated as truly remarkable. Dr. R. had also administered the extract to unmarried women within catamenial ages, and the effect had been to induce intense pain in the breasts of such; but as he could not find anybody in that case that would try the effect of suction, he can't say whether milk was induced or not. After three or four days the symptoms were relieved by a copious leucorrhœa. Among the less generally recognized articles of this class are the, perhaps also less powerful, but yet as I have found them efficient, vanilla and tonqua beans. The former, especially when given in half drachm and drachm doses of the ordinary extract, and even when used as flavors in puddings, ices, etc., frequently have a quite marked effect, although not a very reliable one.

II. *Galactagogues* are articles that tend to promote the flow from the breast of the milk secreted: relieving retention. Retention of milk (in cases in which attempts at suction, both by the child or artificial means, are entirely ineffectual) being caused (a) by its becoming thickened and inspissated in its proper tubes; (b) by a spasmodic stricture of the milk-tubes; (c) by acute inflammatory swelling thereof; or (d) as the result of chronic inflammation of any number of milk-tubes near the nipple by closure of the aperture with obliteration of the canal, sometimes for an inch or more. These I have described in a former lecture, under the titles of strictures of the milk ducts, and system of sphincters or muscular fibres surrounding the outer terminus of the reservoirs of the milk ducts at the extremity of the nipple. The modus operandi of galactagogues is evident, according to the cause. In the first case they are such as tend to restore the normal fluidity of the milk; in the second, such as relieve the spasm; in the third, such as allay the inflammation. In the fourth case, medicines will be insufficient, punctures of the tubes being necessary to remove the obstruction. The retention of milk, and therefore engorgement, is sometimes limited to a single lactiferous tube; and the erroneous notion, heretofore alluded to, as old as the time of Aristotle, that a hair, swallowed, causes the obstruction in the tube, and must be got rid of by suction, is still current, and has given the name to the disease in French (poil). The various antiphlogistic and antispasmodic applications need hardly be detailed here. Decoction of elder flowers internally has been especially recommended as influencing the fluidity of the milk, though all watery liquids (and perhaps pure water, as much) have probably the same effect.

B. ANTIGALACTICS are agents opposing lactation: i. e. the elimination of milk from the human mamma. They may be divided into *Ischogalactics*, and *Phygogalactics*.

I. *Ischogalactics* (ἰσχω, I keep back I restrain) are articles that tend to diminish the quantity of milk secreted. It will thus be seen that I define ischogalactic articles to be exactly opposite in their effect to galactagentia. Before proceeding with their enumeration, we will briefly consider the opposites to galactagogues, which latter I have defined as relieving retention. Now, the individual medicines that *cause* retention need not be detailed. They are Tonics and Astringents. In cases of incontinence of milk, i. e. of insufficient power of retention, preparations of iron, or cinchona, or other tonics, shower-baths, or cold salt-water bathing in proper season, a cool state of the breasts, with change of air and light, are the safest and most beneficial remedies. (Copland's Dict. of Pract. Med., ii. 774.) Internal astringents, as mineral acids, etc., as well as topical astringents, as lotions of tannin, alum, zinc, etc., though they are used with success in these cases, should be employed with caution, as they are apt entirely to suppress the secretion.

Generally when antigalactics or antigalactagogues are spoken of, ischogalactics only are really meant. Against the excessive secretion of milk, cooling diaphoretics, mild refrigerants, and arterial sedatives, saline aperients [more especially *Potassæ Sulphas* (ʒss–℥j), or also Potassæ Bitartras (℥ss), or Potassæ Acetas (ʒiij)], low or moderate diet, sparing use of condiments and liquids, and avoidance of sexual intercourse and sexual excitement, are to be recommended. M. Lever and Dr. Kennedy found nauseating doses of tartar emetic valuable, and Dr.

Stillé speaks highly of full doses of castor-oil. The special ischogalactics are as follows:

1. *Belladonna.*—I have already mentioned that Ranque, in 1829, used a liniment of laurel water, ether, and belladonna to relieve engorgement. He found that from its continued use the milk dried up entirely (Journal de Progrès, xiv. 254). Some years later, Schnurr published several examples of the same effects of belladonna (Hecker's Preuss. Medicinische Zeitschrift, Aug. 1834, p. 143). And in 1856, Mr. Goolden announced his success in arresting the secretion of milk with belladonna (London Lancet, Aug. 1856). Goolden's statement of these effects was soon confirmed in Europe and in this country. Mr. Newman reports success in more than a dozen cases in which no purgative nor other auxiliary treatment was employed (Braithwaite, xxxviii. 220): and many similar cases are reported in the various medical journals within the last two years, especially in the American Journal of Medical Sciences, the North American Medico-Chirurgical Review, the North American Med. Reporter, and the Philadelphia Medical and Surgical Reporter. [See also Trend in British Med. Journal, June, 12, 1858.] In spite of the accumulated testimony of the ischogalatic effect of belladonna, the question of its real power is by no means settled. It was formerly recommended (as will be mentioned hereafter) as a phygogalactic; some regard it as a galactagogue (thus Berry, London Lancet, June, 1857, asserts that it promotes the flow of milk while it relieves tension and pain); while others explain this occurrence of freer flow of milk as the first step in its action, the milk being ultimately dried up (Kingsford, London Lancet, Sept. 1858). Dr. Spring has suggested that in many of the reported cases the subsidence of the inflammation was spontaneous, because he found belladonna quite ineffectual in true "galactorrhœa" (Boston Med. and Surg. Journal Aug. 1858, p. 80); but Prof. Stillé, in regard to this view, justly concludes (Therapeutics and Mat. Med. ii. 47 and 48), that the general coincidence of results obtained by the treatment in question, and the rapidity of bringing them about, appear to render this objection inadmissible. From my own experience, I must deduce the opinion, that while belladonna exerts no influence upon the milk already in the breast, it does in some cases, although not very apparently in all, tend to diminish or suspend further secretion. A mode of employment which I have found very effectual is smearing the watery extract thickly over the whole breast, and repeating this application immediately after washing off the previous one, drying carefully

by compression, and removing by suction or otherwise, as much of the milk in the breast at the time, as possible—once or twice in the twenty-four hours; or a plaster made by a cloth or kid smeared with the extract of belladonna, and with a hole for the nipple to enter, may be placed over the breast, either partially or entirely, thus allowing the breast to be drawn, or the child nursed without further trouble.

2. *Conium.*—Avicenna directs hemlock plasters against the secretion of milk; and it would seem that this was known and acted upon by the ancients generally. According to Guersent, the drug given internally has produced a like effect. (Dict. De Med. article Cigue.) Dioscorides said that conium extinguishes the milk and prevents its appearance, and the development of the mammæ in virgins (Pereira's Mat. Med., Am. Ed., 1843, vol. ii. p. 493). D'Outrepont (who will be again referred to under Phygogalactics), asserts that under the influence of conium the mammary gland ceases secreting, and sometimes will never again secrete milk. Richter is quoted by Stillé (Op. cit. ii. 376), as recommending it in cases where it is wished to arrest or suppress the secretion. I have never used it myself, and should be somewhat afraid that the gland would become atrophied, as has been known to have occurred; that conium has a powerful influence on the gland seems proved by Dr. Williams (whose cases see under the head of Phygogalactics).

3. *Iodide of Potassium.*—M. Rousset, of Bordeaux, published twenty cases, intended to show that when given to the extent of 8 or 10 grains, in divided doses through the day, iodide of potassium would moderate the excessive secretion of milk (Bull. de Therap. lv. 38). Since then many others have recommended it very highly for the purpose. Some give as much as ten grains, three times daily. Rieseberg relates the case of a woman, who owing to deformity of the nipples could not suckle her children, but whose milk nevertheless continued to be secreted profusely. This occurred in her second and third confinements, and both times the secretion was arrested by the internal use of compound solution of iodine. (G. Phano.) Dr. T. Gaillard Thomas says of iodine of potassium given in full doses, and extract of belladonna painted around the nipple, in a lecture published in the American Medical Monthly, August, 1860: "These two remedies have found great favor with the vast majority of those who have tried them; and although I have seen them both fail in checking, or even in diminishing the secretion, I have much oftener in my own practice observed that benefit re-

sulted from their use. I therefore advise you to treasure them in your memories, as means which will prove most serviceable in time of need."

4. *Salvia.*—Van Swieten records a case (Opera, xiv. 234) in which, after the child had been weaned, the secretion and a very troublesome dropping of milk continued. Various remedies were tried, but all in vain; the nurse grew leaner and leaner every day; but the disorder ceased on his giving every three hours one, two, or three ounces of a strong infusion of sage. The extract of sage has been used with as much success as the infusion as an ischogalactic. Before I properly estimated the value of belladonna, I employed Ranque's liniment externally, and an extract of sage internally, in a case in which it was desirable to suspend the lacteal secretion. This was accomplished on the sixth or seventh day, no auxiliary treatment having been used. With this exception I have never tried the sage, but would recommend it, though astringent, as a harmless agent, which certainly appears to exercise some control over the lacteal secretion.

5. *Camphora.*—Dr. Stillé, from whose work, as the most recently published on Mat. Med., I have several times quoted already, says (Op. cit. ii. 153): "Spirits of camphor are *very successfully employed to suspend the secretion of milk*, after parturition; and the oily solution may be applied by friction to disperse the mammary engorgements incident to this period." Now, much as I respect Dr. S. as a teacher, and as the author of undoubtedly the most practical and best text-book on Materia Medica existing in the English language, I can by no means indorse the first part (which I have italicised) of this statement. We find similar views of the effects of camphor promulgated by most authors, seemingly one following the other unquestioningly. I must say, however, that my experience is entirely contradictory to the assumption that camphor possesses any ischogalactic properties. What I have to say of its phygogalactic effects will be stated under the proper head.

6. *Digitalis*, *hyoscyamus*, and *tobacco*, are said by various authors to have been used with more or less success in arresting or suppressing the mammary secretion. I do not, however, find enough positive data to induce me to dwell on either of these articles at any length. Still, I must say, that the effect of the ung. tabaci has been full as marked as that from belladonna, when applied as a plaster in the manner directed for using the latter. I have never seen any constitutional effects from it as is seen from the tobacco poultice upon the testicles, although the effect of belladonna similarly used is very marked upon the iris and pupil of the eye.

7. *Mentha Piperita.*—The essence of peppermint, externally applied, is with many practitioners in great favor, for arresting the secretion of milk. I have used it in many cases, and, while it failed in some, and in one it irritated the skin near the areola so much that it was very disagreeable, yet I am convinced of its marked efficacy. I have generally used it in the following proportions:

℞.	Ol. Menth. Piperit.,	ʒ iss;
	Ol. Ricini.,	℥ iijss;
	Ol. Bergamot vel Jasmin.,	ʒ iss;
	Gum Camphor,	℈ ij. M.

8. To complete this list of ischogalactics, after mentioning *coffee*, which has a marked effect in diminishing the quantity of milk, I must here again refer to the employment of external and internal strong astringents, which, as already stated, may act in this way.

B. II. PHYGOGALACTICS are articles whose action tends to disperse the milk accumulated in the lactiferous tubes (especially when it forms indurated tumors). [I am aware that both the term I have applied to this class of lactatics and its definition are liable to objections.] Phygogalactics somewhat correspond to eutrophics. Their action is supposed to be exerted on the system of nutrition, or specially on the absorbents. They are mercurials, the preparations of iodine (the tincture painted over the breast highly recommended by Dr. H. C. Stewart, Stillé, Op. cit. ii. 907), bromine, the preparations of gold and silver, belladonna, conium, camphor, and chamomile. Belladonna has been long ago used as a resolvent of lacteal humors by Alberti, Zimmermann, Autenrieth, etc.; Evers also recommended it in milk abscess and induration (Richter, Ausf. Arzneimittel. ii. 577), but whether it really does possess any phygogalactic, aside from its ischogalactic effect, I have not been able to determine. I rather doubt it, however. That conium possesses phygogalactic power has been especially shown in the experience of D'Outrepont (Clarus, Handbuch der speciellen Arzneimittellehre, 1860, p. 703), and Dr. S. Fr. Williams, of Deerfield, Mass. American Journ. of Med. Sciences, vol. ix. p. 77). The latter employed at the same time, locally, powdered leaves of conium sprinkled on a poultice of carrots, or of the pond lily, and internally the extract of conium, of which the dose was gradually increased until constitutional symptoms were produced. He reports six cases, some of which he describes as "cancers" and "real open cancer."

Five got well, and one ended in death. Of camphor, I would here say, that while I do not believe that it has any effect on the secretion of milk, I do not deny that it may act as a stimulant to the vascular and nervous systems, and promote absorption. It is possible that it would frequently be valuable as a phygogalactic. I cannot say that I have ever derived much effect upon the mamma from it, but many authors prominently ascribe to it such power. Among the formulæ recommended, I will mention that of Fuller, for external, and that of Bories for internal use. The former is as follows :

℞.	Camphoræ,	℈ ij ;	
	Aq. Theriacal.,	ʒ j ;	
	Ammonii liquid.,	ʒ ij ;	
	Olei Olivar.,	℥ ij.	M.

Bories :

℞.	Camphoræ,	
	Kali nitrici āā,	ʒ ij ;
	Nitri. acetici,	ʒ v ;
	Roob Sambuci q. s. ut. ft. pil. 120.	

S. Take two pills twice daily.

Chamomile flowers have frequently been brought forward as an efficient external application to prevent or remove suppuration ; and it is very probably on this account that some practitioners employ it as a phygogalactic. Personally, I am not able to confirm the experience of Ozanam (Gazette Hebdom. v. 3, 1858) ; nor have trials with the *Species resolventes* of the Saxon Pharmacopœia (Herb. menth. pip., herb. origani, flor. cham., flor. lavand., flor. sambuc. āā ℥ j) given me a more favorable impression. But the whole subject of phygogalactics, and, indeed, as already observed, of lactatics, is involved in obscurity. I have presented it as lucidly as it was possible at present to do, and earnestly invite to its investigation every "working aspirant for fame." It is a field in which a real contribution to pharmacology may be made, well worthy of attention, and promising positive results both interesting and important.

Anæmia following prolonged Lactation—Softening of the Brain.

(Am. Jour. of Med. Sciences, Jan. 1861.)

Dr. Livezy communicated the following case : Ellen Fox, æt. 29 ; born in Ireland ; married ; admitted to the Pennsylvania Hospital, May

10, 1860, suffering from anæmia. She had had three children in rapid succession, there being an interval of but sixteen months between the births of the last two, the elder of which she had nursed until within two or three months of the birth of her last child, so that for several months gestation and lactation had been carried on at the same time. At the date of her admission she complained of general debility, and a thumping sensation in the left side of her head. An anæmic murmur could be heard very distinctly along the jugular veins. She was pale and emaciated, with a frequent but feeble pulse. She was ordered tonics, with good diet, under which treatment she appeared to improve. A few days after, she complained of sick stomach, occurring in the morning, and believed herself again pregnant. On the evening of the 18th inst. she said she felt better, and had been walking out in the yard. She slept well the fore part of that night, but about 3 o'clock the next morning she had a slight convulsion. When I saw her, she was better. I told her to remain in bed next day. She took food, but appeared inclined to sleep. In the evening she was about the same; and had no more convulsions. I was called to see her about 12 o'clock; she was then sensible, but suffering from spasmodic action of the muscles of the arms and forearms, the right being most affected, and when one was in motion the other was quiet. The pupils were natural. Ordered her an injection of mist. assafœtida, and to have mustard applied along the spine. After that she seemed better, and slept about two hours. In the morning she appeared sinking. She died at about 3 o'clock that afternoon.

Autopsy, twenty hours after death.—Rigor mortis well marked. Lungs congested, with minute tubercles scattered through them; there were some tubercular deposits also on the pleura. Heart very small, with concentric hypertropy, and enlargement of the columnæ carneæ. Brain slightly congested, and very soft, particularly on the left side: Under the microscope, its minute structure was seen broken up. The large intestine was very much thickened, especially opposite the attachment of the mesocolon. The thickening consisted chiefly of hypertrophied connective tissue beneath the peritoneal coat of the bowel, and involving its fibrous coat.

Death after Convalescence from Typhoid Fever. (Boston Med. and Surg. Jour. Dec. 13, 1860.)

Dr. Shattuck reported the following case:

Mr. H. M. Daniels, aged 24 years, a medical student, had typhoid fever, from which he was convalescent about the 1st of November. At that time, however, he had diarrhœa, which continued, and for which he took opiates and Port wine. His appetite was hearty. On Tuesday, Nov. 13th, he attended the inauguration of the Zoölogical Museum, at Cambridge, ate some indigestible food, and got quite tired. The next day, the diarrhœa ceased. On Thursday, he dissected from 2 till 10 o'clock P. M., and then studied until midnight. On Friday morning he awoke with great distress from flatulence and pain in the bowels. On Monday evening he was brought on a litter to the Hospital, in great distress, vomiting frequently a greenish fluid. The abdomen was tympanitic and tender. The patient was moaning, and frequently changed his position. Tongue moist, with thin whitish coat; pulse 86. The next day he remained in the same state, and passed about two pints of fæcal matter, after enemata. On Wednesday, the pulse rose to 128; the skin was hot; there was frequent vomiting of a darkish green fluid, especially after taking liquids, which his great thirst impelled him often to do. The abdomen was tense, resonant, and painful on pressure. On Thursday, the pulse was 148. He said he had little or no pain. A fæcal odor was noticed in the matters vomited. The mind was clear, and the patient was cheerful. He died at 9 o'clock P. M.

At the autopsy, which was made by Dr. Ellis, the small intestines were found slightly glued together, and there was general congestion of the peritoneum, but no pus was found in the peritoneal cavity, nor was there any perforation. No disease of the mucous membrane of the ileum was found in the six feet nearest the ileo-cæcal valve, but above this many patches of Peyer, though not at all elevated above the surrounding surface, were quite red and filled with numerous round or linear ulcers, none of which appeared to extend deeper than the submucous coat. The last two or three feet of the ileum were contracted, very red, and adhered quite firmly to the upper part of the pelvis. The intestine contained much bright-yellow, thick fluid. Nothing was found in the appendix. There was no enlargement of the spleen.

Dr. Jackson remarked that the condition of the patches was such as they usually present in the third week of typhoid fever, which was remarkable, considering the duration of the disease. He remembered a case, under the care of Dr. Strong, in which the appearance of the patches was quite recent, though the patient had died three months after the beginning of the fever.

MISCELLANEOUS.

The Review.—Four Numbers of the Columbus Review of Medicine and Surgery have now been issued. From these the profession will be able to judge how far the intentions with which we entered into the design have been carried out. They can now appreciate the distinctive features of our enterprise, and the degree of ability we have been able to enlist in its conduct. From the past they can judge of the future course of the Review, and be able to form an opinion how far the work meets with their concurrence and approval. We do not intend to relax our efforts at constant improvement. We shall endeavor to render each number better and more interesting to medical readers than its predecessors. In the short time the Review has been in existence, we have received most cordial and even flattering encouragement from most of our distinguished contemporaries and our brethren in the profession. Notwithstanding that the political horizon is overcast with lowering clouds, and the commercial condition of the country has been, and still is so unfavorable for new enterprises, we have received more support than could have been anticipated, although no efforts have as yet been made for any canvass on its behalf. The time is now arrived, we think, when this may be done, and we shall, therefore, in a short time, take effective means to present the claims of our journal more directly to the profession.

We trust our brethren will respond liberally to our call. In the mean time we shall feel obliged to all of our friends who have not as yet subscribed to the journal, and who desire its continuance, to let us know at an early date of their intention to patronize our efforts.

Homœopathic College.—The Hahnemann Medical College, of Chicago, has closed for want of support. The concern matriculated three students on credit. Hahnemann taught, the smaller the dose the better the result, a statement singularly verified in this instance.

The Stereoscope.—It is said that Sir David Brewster, in inquiring into the history of the stereoscope, finds its fundamental principle was well known even to Euclid; that it was distinctly described by Galen 1500 years ago; and that Gambatista Porta had in 1599 given such a complete drawing of the two separate pictures as seen by each eye, and of the combined picture placed between them, that we recognize in it not only the principle, but the construction of the stereoscope.—*Chemst and Druggist.*

Tracheotomy in Croup.—M. Henriette, of the St. Pierre Hospital, Brussels, in a note to Professor Thiérry, states, that having well nigh abandoned this operation, after repeated failures, his confidence in it of late has been restored by several instances of success, he having had four recoveries out of eight operations, performed since the end of last year. He believes the chief cause of its failure is the delay in resorting to the performance of the operation. As soon as medical means have failed, and the early symptoms of asphyxia are present, when, indeed, we can otherwise only look to chance for success, we should at once operate before the child's powers become too much exhausted.—*Presse Méd. Belge—Boston Journal.*

Laryngoscope.—By means of a small metallic mirror attached to a slightly flexible handle, a very good view of the interior of the upper part of the larynx may be obtained. A perforated concave mirror (that used with the ophthalmoscope will answer the purpose), is required also. The laryngoscope being introduced over the tongue, the light of a candle or lamp may be reflected into the larynx by a proper adaptation of the two mirrors, and at the same time of course, the image of the interior of the larynx will be reflected into the laryngoscope. By means of this instrument (re-invented by Garcia and Dr. Levin, of Berlin), we shall probably be able to treat laryngeal diseases with much greater discrimination and success than formerly.—*Dr. Czermak,* p. 77.

Ventilation at Night.—An extraordinary fallacy is the dread of night air. What air can we breathe at night but night air? The choice is between pure night air from without and foul night air from within. Most people prefer the latter. An unaccountable choice. What will they say, if it is proved to be true, that fully one-half of all the diseases we suffer from, is occasioned by people sleeping with their windows shut? An open window most nights in the year can never hurt any one. In great cities night air is often the best and purest air to be had in the twenty-four hours. I could better understand in town shutting the windows during the day than during the night, for the sake of the sick. The absence of smoke, the quiet, all tend to making night the best time for airing patients. One of our highest medical authorities on consumption and climate has told me that the air of London is never so good as after ten o'clock at night.—*Florence Nightingale.*

ARAGO ON FRENCH PHYSICIANS.—Preference to the most suffering, to those in most danger, disregarding rank and fortune, such was the sublime rule of the medical corps: and such is still its gospel. I want no other proof than the words of Larrey to his friend Tanchou, wounded at Montmirail: "Your wound is slight, sir; in this ambulance we have room and straw for serious wounds only. They will take you into that stable." The sentiments of the medical body towards the suffering poor are not to be doubted in the country where Antonie Petit said to the irritated Marie Antoinette: "Madame, if I came not yesterday to Versailles, it was because I was attending the lying-in of a peasant, who was in the utmost danger. Your majesty errs, however, in supposing that I neglect the dauphin for the poor. I have hitherto treated the young child with as much attention and care as if he had been the son of one of your grooms."—*Arago's Biographies*, 1st series, p. 163.

A COLONY CONSUMED BY FEVER.—The news has recently reached England of the outbreak of a fierce epidemic of yellow fever on the African coast. Suddenly exploding with terrible intensity amongst a small community of Europeans, it has swept the settlement in which it appeared with the besom of desolation, destroying the whole colony. Of all the Europeans, not one had escaped the disease; only one had escaped death. The surgeons, who remained at their post, were all devoted to death. The *Army and Navy Gazette* furnishes the painful details of the ravages which this disease has thus committed at M'Carthy Island, River Gambia. Amongst the deaths which have to be deplored are those of Staff Assistant Surgeon Thomas Clayton Beale, who was attacked on the 19th of July, and died on the 21st; Staff Assistant Surgeon Trestrail, who was taken ill on the 2d of August, and expired on the 7th; Staff Assistant Surgeon Charles D. Campbell, who was seized on the 17th of August, and who sank under the effects of the scourge on the 25th. The only European remaining alive on the island up to the last accounts, which came down to the 19th September, was Captain Frazer, who had also suffered from a severe attack, but was convalescent. The remittent fever, which is usually so prevalent in the island, had been observable; but no cause can be assigned for the outbreak of the pestilence which had assumed so malignant a form.—*Lancet*, November 3, 1860.

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THE

COLUMBUS REVIEW.

APRIL, 1861.

PART I.—REVIEWS.

URINE IN DISEASE.

[Concluded from No. 4.]

1.—*A Treatise on the Pathology of the Urine, including a complete guide to its Analysis.* By I. L. W. THUDICUM, M.D., Lecturer on Chemistry, etc., etc., London. I. Churchill. (pp. 429.)

2.—*Diseases of the Urinary Organs, a compendium of their Diagnosis, Pathology and Treatment.* By WILLIAM WALLACE MORLAND, M.D., Fellow of the Massachusetts Medical Society, etc., etc., etc. With Illustrations. Philadelphia: Blanchard & Lea, 1858. (pp. 579.)

3.—*Urinary Deposits; their Diagnosis, Pathology and Therapeutical Indications.* By GOLDING BIRD, M.D., F.R.S. Edited by Edmund Lloyd Bukett, M.D., Caius Coll. Cantab., etc., etc. A new American, from the fifth London Edition, with eighty Illustrations on Wood. Philadelphia: Blanchard & Lea, 1859. (pp. 382.)

4.—*Clinical Lectures on certain Diseases of the Urinary Organs and on Dropsies.* By ROBERT BENTLEY TODD, M.D., F.R.S., Physician to King's College Hospital. Philadelphia: Blanchard & Lea. (pp. 283.)

WE now pass to the next class. (g) Floculent, semilucent or cloudy deposits, occupying considerable volume, easily diffused throughout the fluid. The first of these we shall dismiss very briefly. Found in all urine, *mucus* becomes abnormal, and of consequence, when in great excess. This excess may depend upon irritation of urinary organs from alkalinity of urine or the presence of other excitants. When sufficient to attract attention, there are usually present other symptoms and appearances indicative of the special pathological condition. To some of these we have already adverted in our remarks upon blood and pus. But when other diseases are negatived, and the secretion of an excessive quantity of mucus is the only symptom present, we must regard it as indicative of that form of disease of the bladder known as cystirrhœa, in its early stages. As it proceeds, pus appears in the urine, together with the mucus, and in the later stages, " the urine becomes scanty, high-colored, and may return to an acid reaction; the mucus and pus often nearly or totally disappear. Death is then imminent. The sudden change of alkaline to acid urine, in protracted vesical disease, is considered a fatal symptom," (Morland, p. 85.)

An excess of mucus, the result of some local irritation, may be transient, and without any subsequent ill effects.

Kiesteine. The old story in Boccacio's Decameron, of the simpleton hoaxed into a belief of his illness, who is persuaded to send some of his water to a physician in the plot, and is gravely informed that he is pregnant, and the hundred and one similar stories founded on this one, shows the popular belief that some evidence of pregnancy can be detected in the urine. In 1831, Nanche, of Paris, propounded his view of a peculiar gelatino-albuminoid ingredient found only in pregnancy, and separated by rest alone, which has received the name of *Kiesteine* or *Kyesteine.* The celebrated Dr. Kane examined the urine of 85 pregnant women and 94 during lactation, and considers the formation of a pellicle, after a few days' standing, like the scum of mutton broth, and emitting a peculiar, cheesy odor, as characteristic of pregnancy. The pellicles seem to consist of minute prisms of triple phosphates and amorphous granules of animal matter. Dr. Bird, from the evidence of upwards of thirty cases, regards it as a valuable corroborative sign. Other eminent observers have concurred in this opinion; but on the other side, there are not wanting able men who attribute the appearances to other conditions, and affirm that they are to be met with in women not pregnant, and even occasionally in men! Further observations are required to settle the definite value of kiesteine as a diagnostic symptom of pregnancy. Certain it is, it can be generally recognized during gestation without trouble. Dr. G. Bird's work is the only one of those whose titles we have placed at the head of this article, in which any reference to this question appears.

The existence and diagnostic value of the next substance we shall refer to, is involved in no such incertitude. Albumen is certainly well known, and, in the main, its importance duly appreciated. It is, of course, to be found in urine where blood or pus is present, but its chief pathological interest depends upon its presence in urine without any other of the blood constituents.

> "It then indicates," says Dr. Thudicum, "a pathological condition of the kidneys of a temporary, chronic, or permanent nature.
>
> "Under all circumstances, however, the immediate cause of the exudation of albumen through the kidneys is increased pressure of the blood in the malpighian bodies, whereby those bodies expand and allow a certain amount of albumen to pass through their tissue. When the pressure becomes greater, rupture of the arteries is the necessary consequence. (Thudicum, p. 253–4.)

This throws us back upon the question as to the forces which exert this pressure, and the pathological states which favor their development. In our remarks on the presence of blood in the urine, we alluded to the stasis of the vessels of the malpighian bodies produced by the irritation of some blood-poison in the course of elimination by the kidneys. Thus we traced the discharge of blood in certain diseases to the solution of continuity of these vessels by the force of this pressure thus set on foot. The same state of affairs is found when albumen is excreted alone—the same pressure exerted, the same tension of the vessels, only no rupture of the coats has taken place, and the albumen in solution is filtered through the tenuous walls. In scarlet-fever—in measels—in pregnancy—in cholera—in rheumatism, especially the acute type, albuminuria is not an unfrequent symptom, although in a majority of cases it is transient. When it occurs during chronic rheumatism it forebodes a speedy acute attack. In typhoid fever it may occur after the crisis of the disease, and during the commencement of convalescence. In typhus fever, on the other hand, it occurs in *all* cases and at an *early period of the disease.* Thus Dr. Edwards found albuminous urine in fourteen cases of typhus fever between the sixth and twentieth days. The urine in these cases was of low specific gravity. In pregnancy Dr. Brann thinks the albuminuria due chiefly to a mechanical cause, "the retardation of the stream of venous blood in the kidneys, from compression of the venous trunks by the gravid uterus." The prognosis is less unfavorable when due to this cause. In puerperal convulsions also albumen is constantly excreted by the kidneys. In the early course of puerperal mania also, according to Dr. Simpson, of Edinburgh, albuminuria is a noteworthy symptom. We incline to the belief that it is very transient and that it disappears in a few days. The intimate relations of dropsical effusions and albuminous urine and the diseases of the kidney upon which they depend, are deserving of a brief notice. They naturally divide themselves into two great classes.

> "Of these the first includes those cases which are distinctly and decidedly dropsical—in which the dropsy is at once the most marked and the most urgent symptom, which both patient and physician watch from day to day, each alike anxious for its reduction and entire disappearance; the second consists of those cases in which the dropsy attracts but little notice, is very variable in amount,

> being in some cases considerable, but never excessive, while in others it may be very slight indeed or even altogether absent; and in some instances the disease may go on for a long time and possibly destroy the patient's life without giving rise to the least œdema. All the cases of both these classes exhibit the common feature of a more or less albuminous condition of the urine." (Todd, p. 71.)

The relations of these two great classes and their pathological condition, are briefly classified by the same author:

" A. Cases in which dropsy is urgent and acute, and albumen abundant, . . .	Acute dropsy; dropsy after scarlet fever, ...	Acute enlargement of kidney.
" B. Cases in which dropsy is not a prominent symptom—is very variable in amount, chronic, and may be absent; albumen variable, ...	Chronic enlargem'nt of kidney, . . .	Fatty disease (Bright's kidney); waxy disease.
	Chronic contraction of kidney, . . .	Chronic nephritis or chronic wasting kidney; gouty kidney."

(Todd, p. 91.)

Tube casts, which so frequently accompany albuminous urine, and are occasionally found in other varieties, are of various sizes and characters, from one-thousandth part of an inch in diameter to one-five-hundredth. The medium sized casts, about one-seven-hundredth or one-eight-hundredth of an inch, are perhaps most frequently met with. Their composition is of course essentially some transparent tenacious substance (allied to fibrin, if not that substance), as a basis which is moulded into shape by the *tubuli uriniferi* into which it was effused. Whatever may be *free* or detached in those tubes at the time of the metamorphosis of this substance from its fluid to its semi-solid state, will of course be attached to or imbedded in the cast. Blood corpuscles and pus globules are thus involved to form the blood casts and pus casts we have already referred to. If the epithelial layer of the tubes be in process of desquamation at the time a cast is forming, the epithelial cells will coat the fibrinous substance, and thus is moulded an epithelial cast. These are usually of medium size. Their pathological import is thus stated by Dr. Thudicum:

> "The presence in the urine of the epithelial casts is a symptom of a disease of the kidneys caused by the entrance into the blood of a morbid substance — a poison — the elimination of which is effected by these organs." (p. 245.)

Their presence, therefore, for a limited time, may be regarded as favorable, or at least as not unfavorable, occurring after scarlet-fever, cholera, or in acute nephritis, from the other local excitants already enumerated, but when they are found mixed with blood or pus, or become chronic, the prognosis is unfavorable in proportion to length of time. When these medium casts are granular in their appearance, or when fat is seen in the epithelium, the more grave diagnosis must be made of granular kidney or fatty degeneration. But it happens when the basis of the cast is poured out in the tubes themselves that the epithelium may be adherent, and not inclined to desquamate, and may even be swollen, or the hyperæmic condition which obtains may have contracted the calibre of the tubes themselves. In these cases the hyaloid cast, homogeneous and translucent in its character, is formed without any extraneous substances adherent to it. To this has been given the name of *Waxy cast*, of minimum size. These may occur in the earlier stages of scarlet-fever — renal-disease, before the epithelium is washed away by the urine from the walls of the tubes. They do not of necessity indicate a fatal disease, but only some state of great irritation about the tubes, which may or may not become so. When however these *smalll waxy casts* are persistent, the urine of high density, and albumen abundant, we shall find them alternate with fatty deposits and denote the fatty degeneration of the kidney. Then the epithelium which has remained on the walls of the tubes has itself degenerated into this fatty substance.

In so-called *waxy degeneration* of the kidney, the *large transparent fibrinous casts* are frequent. In these cases the tube cells become almost entirely denuded of their epithelium and their calibre by so much increased. In this manner the casts become of great size. Large quantities of albumen are poured out. The same *large waxy casts* are found in the contracted kidney of gout. We need not add that the continued presence of this class of casts in the urine must lead to a very grave prognosis.

Among the *floculent* deposits we may include *spermatozoa*, the fluid containing which retains a cloudy appearance, dispersed throughout the urine. But as their presence can have but one import we need not delay on their account, but pass at once to notice the

(h) *Crystalline deposits*, usually small in quantity, precipitated to the bottom or adhered to the sides of the vessels.

Uric Acid is found in this class when it occurs as a separate deposit. As however we have noticed it with its more usual compounds, we pass to the consideration of *Oxalate of Lime.* The formation, nature, and pathological import of this ingredient have constituted subjects of warm dispute among those devoted to Urology. Lehmann and Schmidt both deny that oxalic acid taken into the stomach can reappear in the urine. Wœhler affirmed that it did. Buckheim confirmed his experiments, in which Protrowsky concurred. They have also been repeated with great care, by Dr. Thudicum, with the same results. He therefore enunciates the law that

> "The presence of oxalic acid or any of its compounds in urine, may indicate that oxalic acid or any of its compounds has been introduced into the stomach as an ingredient of food, as a medicine or as a poison." (p. 362.)

The frequency of this deposit has been noticed by many observers, and some have based upon this fact an argument to establish the proposition that it is of no importance as a symptom. Among these Lehmann stands most prominent. Dr. Owen Rees regards it as comparatively unimportant, and that "whenever oxalate of lime is found in the urine it should be regarded *as produced after secretion.*" We need not enter into the arguments which refute this view. Too much space would be necessary to give them fully. It is sufficient for our purpose to state our agreement with Dr. Thudicum, when he asserts:

> “The presence in the urine of any considerable quantity of oxalic acid in any form, for a longer period of time, during which the ingestion of oxalic acid in any form into the stomach was excluded, indicates the existence of a disorder, the nature of which is at present entirely unknown.” (Thudicum, p. 366.)
>
> “The presence in urine of such small microscopical traces of oxalate of lime, that their quantity cannot be estimated by quantitative analysis, is of no practical or pathological importance.” (Ibid, p. 367.)

Dr. Morland quotes from an article by Dr. Bacon, to show the frequency of oxalate of lime deposits, from which it appears that of 1122 specimens of urine examined during the past six years, at the Massachusetts General Hospital, 909 contained deposits of some kind. Of the crystalline deposits (including amorphous phosphate of lime), the following proportion obtained:

“Oxalate of lime occurred in			380	specimens.
“Urates	“	“	180	“
“Earthy Phosphates	“	“	108	“
“Uric Acid	“	“	46	“
“Cystine	“	“	4	“

“The four deposits of Cystine were from one patient. Comparing these numbers with the whole number of *deposits*, we obtain the following proportions:

“Oxalate of lime was found in			42	per cent.	(nearly).
“Urates were	“	“	20	“	“
“Earthy Phosphates	“	“	12	“	“
“Uric Acid	“	“	5	“	“

The oxalate of lime is frequently found, together with albumen, in renal diseases, and during the convalescence from severe general diseases. Thus Kletzinsky found them abundant in three cases, in the first urine after the collapse of cholera. But there is a class of disease, of the digestive organs, primarily with variable symptoms, in which oxalate of lime is a fixed and important characteristic. Dyspepsia, with its usual pains—unequal appetite, which either loathes or craves food, but never relishes it—diarrhœa and constipation alternating—a sensation of uneasy weight at the pit of the stomach—sleeplessness—gradual emaciation and languor—an increasing anxiety about the illness, and above all a *constant exaggeration* of the *feelings*, *sensations* and *fears*, respecting the spmptoms noted by the patient, are the leading features of this class of cases, and in these oxalate of lime is abundantly excreted. Common to all classes of society, perhaps these cases are more numerous among men of sedentary and studious habits. When a large increase of urea coexists with the oxalates the running down of the patient is more rapid. In these a guarded though favorable prognosis may be given, if regular exercise, attention to diet and occupation be insisted upon—a change of climate and scenery, will wonderfully assist the return of health. The mineral acids, with bitter infusions, and in some cases minute but long continued doses of arsenic, are exceedingly useful in this form of disease. The establishment of the excretion of oxalate of lime is sometimes due to long venereal excesses, when it and its attendant symptoms are not easily if ever got rid of by the most judicious treatment. In epilepsy the oxalate of lime, and especially the dumb-bell forms of it, are abundant, especially about the time of a paroxysm. In these cases there is a deficiency of urea, as we have already stated. Oxalate of lime is an exceedingly common deposit in the subjects of melancholia. The replacement of the oxalate of lime by the urates is a favorable symptom. What relation exists between the octohedral crystals and the dumb-bell forms of oxalate of lime, as to their pathological indications, we are not able to state. We are inclined to think that the appearance of the dumb-bells indicates a more chronic character of the disease than when the crystals are alone seen. But this is by no means certain.

Cystine is very rarely met with. A calculus is usually present, or shortly results from it. It forms an almost colorless deposit, and gives the urine the odor of sweet briar. This peculiarity sometimes leads to an examination for its detection. Its pathology is very obscure. It is supposed to be connected with the deficient action of the liver relative to the excretion of sulphur—a view sustained by Golding Bird, Virchow and others. Dr. Prout thought it was connected with fatty liver. It has been found in some diseases of a strumous character, in chlorosis, and in a patient worn down by "studious toil." There seems to be evidence of the hereditary transmission of the liability to this kind of urinary deposit.

With this very hasty glance at the leading substances met with among urinary deposits, we come to the consideration of

2. *Substances soluble in urine;* of which we have (i) Normal constituents of urine in abnormal quantities. (k) Abnormal substances.

(i) *Normal constituents soluble in urine may exist in excess or deficiency.* Among the most important of this class are the variations in

Urea, which, although not occurring as a deposit, may be very easily detected, whether it is in excess or deficiency, by the addition of nitric acid, and noting the rapidity and amount in which the nitrate of urea is formed. For practical and clinical purposes this is quite sufficient. If largely in excess, crystals of urea can be readily seen under the microscope, upon simply evaporating part of the urine submitted to examination. This increase of urea is seldom without a corresponding excess of other constituents. The brown pigments (urœmatine), the sulphates and earthy phosphates, may each or all be especially increased. So in certain cases may uric acid, but in most instances the reverse is true. The amount of urea found in the urine may be taken as the metre of the retrograde metamorphoses. "Der Harnstoff ist das Maas des Stoffwechsels," says Bischoff, and undoubtedly the intensity of the changes going on is expressed by the *amount* of urea.

> "One great fact is undoubtedly established, namely, that as urea is the principal product of the metamorphosis in the body of nitrogenized food, the quantity of urea must stand in a direct relation to the quantity of food taken, or if little or no food be taken, to the amount of nitrogenized component parts of the body, disintegrated in the place of food. In this sense must be taken the expression, that urea is the measure of dissimilation." (Thudicum, p. 73.)

According to the experiments of Dr. Hammond, U. S. A., muscular exercise greatly increases the elimination of urea. In acute mania it is greatly increased, but whether owing to the muscular excitement such patients indulge in, or to the pathological process of the disease itself, may be a question. In various inflammatory diseases, as in pneumonia—pleurisy—rheumatism, with endocarditis while effusion is taking place, large quantities of urea are poured out, which diminish very sensibly as absorption is carried on. Urea is also largely increased in certain cases where a large deposit of oxalate of lime occurs, wherein aggravated dyspeptic symptoms are the prominent characteristics of disease, and emaciation more or less rapidly takes place. In fevers generally, but especially in typhus, urea is abundantly discharged. On the other hand, the quantity of urea is usually below the average in chronic diseases. This is not unfrequently due to the failure of excretory activity of kidneys, especially towards the end. It is diminished in those diseases of the kidneys usually embraced in the common name of *Bright's disease*, in chronic mania, and to a remarkable degree in many cases of epilepsy. When the action of the kidneys is from any cause impaired, urea is found in the blood, and seeks other channels of elimination. It accompanies the serum effused into cellular tissues and cavities. Prevost and Dumas detected it in the blood of animals, from whom the kidneys had been removed. Rayer and Ginboust observed it in the dropsical effusions of Bright's disease. This has been confirmed by various observers. In cholera the condition of the blood itself prevents the excretion of urine, and urea is found in the blood and viscid perspiration of this disease. Urea has also been detected in the vitreous and aqueous, humors of the eye, and in the liquor amnii in exceptional cases. When an excessive amount is retained from any cause in the blood, death from uræmia occurs in a short time.

Urœmatine, the natural pigment of the urine, and probably derived from the blood globules (hæmatine), as it is always found in combination with iron, must not be confounded with purpurine or urœrythrine, *which is always an abnormal product.* Dr. Bird confounds the two substances together, and describes them as *one*, under the name of *purpriine.* In acute diseases urœmatine or the *natural* pigment is greatly increased, although the quantity of urine is decreased. It is also increased in typhoid fever, and occasionally very much so in rheumatism, scarlet-fever, lead-colic and typhus fever. It is diminished in chlorosis, in anæmia, in hysteria and during the convalescence from disease in general. With ovarian tumors and in fast growing children, the quantity of this substance excreted is very low. When the true purpurine is present, as in hepatic diseases, this substance is also increased, as we shall hereafter see.

But little is known as to the relation of the *sulphates* to disease. We know they are increased after excessive exercise, and after taking into the stomach sulphur. The sulphates of magnesia and soda, however, induce the most copious excretion of them. Vogel found that they were diminished in most acute diseases, although among severe cases of pneumonia he found three exceptions. In chronic diseases he found the sulphates more variable. They are increased largely in delirium tremens and chorea, especially the acute stage of the latter disease.

The *chlorides* have an especial interest from the observations recently made upon their action in pneumonia, and some other diseases. Redtenbacker and Simon first pointed out that

> " Chloride of sodium, a salt always present in healthy urine, was absent from that fluid during the onward progress of pneumonia, and returned to it when absorption of exudation was about to take place. " This was verified by the observations of Dr. Lionel S. Beale, who arrived at the conclusions,
>
> 1. " That chloride of sodium " is totally absent from the urine of pneumonic patients at the period of complete hepatization of the lungs.
> 2. " The chloride reappears after the resolution of the inflammation."
> 3. " The chloride exists in the blood in the largest quantity when most abundant in the urine, and *vice versa.*"
> 4. " The chloride exists in very large quantity in the sputa of pneumonic patients.
> 5. " There is reason to believe that in pneumonia the chloride is determined towards the inflamed lung, and is re-absorbed and removed on the resolution of the inflammation. (G. Bird, p. 117.)

The value of the changes in this substance as diagnostic of the *onward progress* of pneumonia is unquestionable, but it remains to be determined whether they are to be relied upon as peculiar to *pneumonia.* Here authorities differ. It seems to be conceded, that the chlorides are absent in small pox. According to Thudicum, who supports Vogel in his opinions,

> "In all acute febrile diseases, the amount of chlorine discharged in the urine sinks rapidly to a minimum, say one hundredth part of the quantity normal to the individual, until at last in certain cases it disappears entirely for a short time. When the diseased action is abating, the amount of the chlorides rises during convalescence, sometimes above normal average." (Thudicum, p. 166.)

And they particularly refer to bronchitis, typhus fever, acute rheumatism, pyœmia and pleurisy, as diseases in which these phenomena are observed. On the other hand, Professor Bennett, of Edinburgh, in his clinical lectures, expresses highly in favor of the absence of chlorides as almost pathognomonic of pneumonia. In ten cases of pneumonia the absence of chlorides marked precisely the onward march of the pneumonia, whilst their presence indicated its cessation, and was generally accompanied by the returning crepitation, and commencing absorption of the exudation,* and he gives an example of its diagnostic value in a case where there were many signs and symptoms of pneumonia, complicated with heart disease. "The question," he says "on admission, was whether, with heart disease and bronchitis, pneumonia might not be conjoined, and I was assisted in answering in the negative, by the abundance of chlorides which the urine contained." † Under his direction Mr. Seymour tested the urine of fifty cases then in the wards, embracing a great variety of disease, and found the chlorides absent in one case of phthisis *with intercurrent pneumonia*, and in one case of peretonitis, and in every case of small pox, but in no other diseases. Careful observations upon the chloride of sodium in disease are still wanting. It may not be without interest to remind our readers of the simplicity of the test for this substance. Add a drop of *pure* nitric acid to the urine, then a small quanity of the solution of nitrate of silver, and a white cloud instantly forms if the least trace of chloride of sodium be present. The denser the cloud, of course the more chloride is present. Chloride of sodium is greatly increased in diabetes insipidus. In dropsy generally an increase in the quantity of chlorides voided is a favorable sign.

We can only find room to remark concering these interesting substances, *creatine and creatinine*, which properly belong in this division of our subject, that Dr. Thudicum considers them as excrementitious substances, exclusively derived from muscular tissues, and that they are largely increased during convulsive action, e. g. in tetanus and epilepsy.

(k) *Abnormal substances found in solution in the urine in disease. Bile.*—The presence of the coloring matter of bile (biliverdine) in the urine, indicates that the flow of bile from the liver to the intestines, is somewhat impeded or suspended. But as jaundice seldom depends upon the detection of this for its diagnosis, we dismiss this part of our subject with the following practical remarks from Dr. Thudicum, respecting a diseased condition, resembling and easily mistaken for icterus, in which an examination of the urine may prove of service:

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* Clinical Lectures on the principles and practice of medicine, by John Hughes Bennett, M.D., F.R.S.E. (p. 638.)

† Op. Cit. p. 639.

> "There is however a certain dissolution of the blood consequent upon, or part of the pathological process of pyœmia, which produces the green or yellow icteric color of the skin and tissues, without being accompanied by retention of bile, as the frequent fluid evacuations contain abundance of green coloring matter, and the dark-red or brown urine does not show the color test with nitric acid. The analysis of the urine distinguishes this from true icterus." (p. 277.)

Sugar. The existence of grape sugar in the urine, is the characteristic of *diabetes mellitus*, a disease whose pathology is in much dispute, and to which important contributions will doubtless result from the labors of Bernard and others. Into the various speculations upon the pathological questions involved in this disease, we cannot enter. Its chief symptom is the excretion of large quantities of urine of high specific gravity, and containing large quantities of sugar. Sugar may be detected as a temporary product in the urine under other circumstances. Inhalation of ether or chloroform, is said to produce temporary glycosuria, and in some cerebral diseases, as concussion of the brain, sugar is found.

A peculiar odor marks the breath and perspiration of diabetic patients. It is compared by various authors to different known odors. One thinks it like the breath of one who has inhaled chloroform, another like the smell of apples. All concur that it is a sweetish, sickley smell. It is found to be dependent upon the presence in the blood and urine of diabetic persons, of *acetone*. It is supposed to possess decided anæsthetic properties, and this quality may have much to do with the manner of sudden death, so often observed in patients afflicted with diabetes.

Purpurine or urœrythrine, is always an abnormal coloring matter. It gives to various deposits a pink color in certain classes of disease. We have already alluded to the confusion which has prevailed respecting the connection of this substance and urœmatine, the natural pigment of the name. For the clearing up of this confusion, we are greatly indebted to Dr. Thudicum. Purpurine can easily be distinguished from urœmatine, by the addition to the urine of a solution of the acetate of lead. When purpurine is present a *pink* precipitate is thrown down after a short time. If only urœmatine is there, a dirty white deposit results. In all cases where purpurine or urœrythrine is found, urœmatine is also present, usually in excess. So also, urea and uric acid are increased. The ingestion of metallic salts, lead, copper, mercury, arsenic and antimony, in small doses, causes purpurine to appear in the urine, but it does *not* accompany disease of the kidneys, nor follow the use of diuretics. The diseases in which it most generally occurs are as follows:

1. " *Acute rheumatism.* In this disease it is almost constantly present, but its quantity is often changing periodically. *Pericarditis;* when this disease sets in the earthy phosphates mostly undergo a rapid diminution, and during twelve hours may fall from the highest to the lowest figure. Then follows sinking of the chlorides, until they disappear entirely, and some albumen mostly makes its appearance. At this stage the quantity of urœrythrine present, is very large. Pneumonia, pleuritis, peritonitis and acute morbus brightii, when complicated with acute rheumatism, show the same course of *urœrythrine* and other ingredients of the urine.

2. " *Certain diseases of the liver*, such as hypertrophy induration, granular liver, are accompanied by the largest amount of urœrythrine that ever occurs in the urine. Ascites in consequence of liver disease, gives a large amount. In these cases the quantity of the phosphates is normal, and the amount of urœmatine is mostly increased. The coloring matter of bile is only present in cases which are complicated by obstruction of the gall-duct.

3. " *Lead colic and metalic poisoning.* In these cases the urine is similar to that in diseases of the liver, but never contains the constituents of bile. Lead and copper, when causing disease, are always to be detected in the urine, and the other metals in many cases. Earthy phosphates are variable.

4. " *Intermittent fever.* The phosphates are variable, urea is mostly diminished except during paroxysms.

5. "*Diseases of the Brain.* In acute cases of arachnitis and meningitis the amount of urerythine in the urine is always large. The quantities of earthy phosphates and of urea are increased. There is little ammonia and albumen. In chronic diseases of the brain, such as hydrocephalus and tubercles, urerythine is often present. Typhus also makes urerythine appear in the urine together with an excess of earthy phosphates, particularly when brain symptoms are prevalent." (p. 324–5.)

With this we bring our survey of the elements of urine in disease to a close, although many points have received too cursory a notice, and some interesting matters have been omitted altogether. This however was unavoidable in an article of less than monstrous dimensions.

The works at the head of this article are all worthy of a place in the libraries of medical men. Dr. Thudicum's is the most complete work on urine in the language, especially in its physiological and chemical relations. The volumetric methods for testing for the various substances contained in the urine, so superior to all other modes of analysis, from their comparative simplicity and ease, are fully detailed in this volume.

This new edition of Dr. Bird's Urinary Deposits, will be welcome to all who know and value the original work of Dr. Bird, the first of its kind, and still, in its practical blending of pathology and therapeutics, dependent upon urinary changes, maintaining its ancient high standard of excellence. Dr. Todd's lectures upon urinary diseases, are really *clinical* lectures. Their only defect being the narrow scope of their subject, which only embraces a very small portion of those diseases. Dr. Morland's work refers less than either of the others to the urine per se, but rather to the diseases of urinary organs. The volume is perfectly full of matter, well digested, and although somewhat deficient in the methodical arrangement of his materials, furnishes a complete compendium of knowledge, respecting the "diseases of the urinary organs."

The importance of a due attention to the evidences of disease, furnished by the constituents of the urine, is too often overlooked. Yet some diseases, as diabetes and albuminaria, depend upon such an examination for their recognition. In many other diseases the differential diagnosis is greatly assisted. Nor is such an exploration without its value in surgical cases.

"I have known," says an eminent authority (Dr. Bence Jones), "the removal of a doubtful cancer of the lip, cause death which might have been delayed, for a time avoided, by examination of the urine. After death it was remembered that the patient had been in the house previously for diabetes, and was thought to be cured, but I examined the water taken from the bladder after death, and found sugar in it.

"I have known the simple removal of a pile cause death, where the patient had albuminous urine, and probably before long no operation will be undertaken until it is known whether the urine is healthy or not; and also in the prognosis after an accident the state of the urine is worthy of attention. The number of deaths after operation at St. George's Hospital, during the five years 1844 to 1848, was seventy-two cases, independent of lithotomy, and of these thirteen cases, or near eighteen per cent., had disease of the kidneys. Moreover, the deaths after slight accidents during those five years, may in many cases be traced to disease of the kidneys."

LAWSON ON PHTHISIS PULMONALIS.

A Practical Treatise on Phthisis Pulmonalis, embracing its Pathology, Causes, Symptoms, and Treatment. By L. M. Lawson, M.D., Professor of Clinical Medicine in the University of Louisiana; Visiting Physician to the New Orleans Charity Hospital; formerly Professor of the Theory and Practice of Medicine in the Medical College of Ohio, etc. Cincinnati: Rickey, Mallory & Co. New York: S. S. & W. Wood, 1861. (pp. 557.)

When we consider how very prevalent pulmonary consumption is in our country, and the deep interest felt concerning it, it seems to us that the absence of a reasonable degree of certainty regarding its nature and management, is one of the culpable faults of our profession. An early recognition is much insisted upon by all writers on this disease, which, followed by a rational judicious treatment, will we are told, enable us either to eradicate it, or prolong life in a large proportion of cases. It is very much to be desired that a larger number of those suffering from phthisis might receive the benefit of this early recognition and judicious management: thus would mortuary tables be robbed of one of their most startling items, the cause of humanity promoted and our profession newly honored. As a means to this end, we welcome most cordially the book before us, feeling satisfied, from a very careful perusal, that those who read and digest it well, will be better prepared to contribute to results so devoutly to be wished. We might according to custom, take particular pleasure in commending it from the fact that the author is a much esteemed member of the profession of our own State, but it boots us nothing whether he live on the banks of the Ohio or the Seine, desiring only as we do the advancement of the medical profession in its ability to relieve disease, and that due credit should be given to all who contribute towards this object.

Our author's views concerning the necessity for a work of this kind, are clearly stated in the following extract from his preface:

> "In offering to the profession of the United States this Treatise of Phthisis Pulmonalis, I desire to state briefly that I was impelled to the task from a belief that a work on the subject was needed. There has been no American work on phthisis since the publication of Dr. Morton's *Illustrations*, in 1838, which is now out of print; and although many excellent foreign monographs on this subject have been republished in the United States, they cannot supply the want of an indigenous treatise. It is not presumed that consumption is different in this country from the same disease elsewhere; but at the same time, it is evident that the influences of climate, domestic habits, races, and other modifying conditions, render a systematic account of the disease as met with here, highly important. Hitherto, the facts in relation to the prevalence of phthisis in the United States, have not been collected in a systematic form, and hence the most opposite opinions prevail on the subject. Some believe phthisis to be most prevalent in the Northern States, while the highest authorities (Forry, Drake) teach that the disease is more common in the South. I have endeavored, by the collection of the most accurate statistics, to settle this important question, and thus to enable the practitioner to direct his patient to those localities which offer the greatest chances of relief."

Dr. Lawson's book numbers 557 pages, and the contents are conveniently arranged in four leading parts, as follows:

Part I. Pathology of Phthisis.
" II. Etiology of Phthisis.
" III. Semeiology of Phthisis.
" IV. Therapeutics of Phthisis.

The parts are divided into chapters, and these again into sections, each one of which treats of some particular subject, so that they are all to a great extent complete links of a single chain. This convenient arrangement, and the excellent manner in which it is indexed, will render the volume a very valuable aid to the physician in daily practice.

That a constitutional predisposition exists in many persons to the development of tubercular disease, is a fact well established by extended observations. The essential nature of this predisposition is unknown, but its transmissibility from one generation to another is admitted. The term *tubercular diathesis* has been applied in such cases to indicate a mere tendency to disease. In the following paragraph our author takes exceptions to the use of this term, and suggests that of *tuberculous constitution* to be used in its stead:

> "It appears to me, however, that this application of the term diathesis is palpably unphilosophical, and contrary to the well-known laws of the human organism. If the term does not indicate disease, it must, of necessity, represent a state of health; and if a normal state of structure and function exist, there can not be at the same time a predisposition which leads *spontaneously* to a particular form of disease. On the contrary, when the organization and vital actions are perfectly normal, the *tendency* is to the maintenance of that condition, and the development of disease requires the intervention of an exciting cause. A state of the organism, therefore, which *spontaneously* leads to a particular disease, is of itself an abnormal condition, and consequently is something more than a mere *predisposition* to morbid action. Hence, instead of employing the term diathesis in its conventional sense, I shall substitute the phrase *tuberculous constitution* to designate a state of the organism which is a departure from the true physiological type, and which, under varied influences, may remain stationary, recede, or spontaneously advance to the completion of the tubercular process. The tangible changes which constitute this tuberculous constitution, are observed in the modifications of certain structures and functions, which indicate a departure from the physiological type, instead of a simple *predisposition* to disease." (pp. 15, 16.)

After reviewing much that has been said concerning the particular conformation of the chest, in those possessing the tuberculous constitution mentioned above, Dr. L. concludes, "that there are no certain and infallible external indications of this constitution," thus taking side with Hasse and Rokitansky, the former of whom says, that "a frame of body certainly indicative of future phthisis does not exist;" the latter, that "the well-known and so-called phthisisical conformation of the chest is not always present; and what peculiar relation it bears to tubercular disease is still unknown. The assumption that it depends on smallness of the lungs is unwarranted and hypothetical." The author does not agree with Dr. Bennett, that derangement of primary digestion is a cause of the tuberculous constitution, "but that the digestive defect, whatever it may be, is a part of the constitutional infirmity, and therefore is an accompaniment, and not a cause, of whatever derangements ensue."

Passing over much that is interesting in the sections on the condition of the Respiratory Function, State of the Circulation, Nervous System, etc., we come to the author's conclusions upon the Pathology of Phthisis, from which we make the following extracts, premising these by stating that he inclines to the belief that there is but one species of true tubercle, which is the opaque or yellow form:

> "It is difficult to decide many of the ultimate questions started by pathologists in relation to the formation of tubercle; but, at the same time, thanks to the indefatigable researches of numerous observers, we are able to offer a reasonable explanation of the process. If tubercle is simply a retrograde metamorphosis of pre-existing tissues, without a specific exudation, it is essentially a local disease, independent of a constitutional dyscrasia; but as already stated, Virchow admits both conditions, although he regards the local change as an altered state of the structures of the part.
>
> "The histology of tubercle reveals peculiar cells, destitute of nuclei, and wholly unlike the corpuscles of any other product, healthy or morbid, and there is no distinct evidence that they constitute a degraded state of any pre-existing tissue. The tubercular deposit may, indeed, take place *in* the air cells, as believed by Schrœder, Vander Kolk, Sieveking, and many other pathologists; but this fact, if true, does not establish the additional opinion, that tubercle corpuscles are merely changed epithelial. The fact, that they are unlike all other cells, affords a reasonable ground for the opinion that they are *sui generis*, and hence not a changed structure.
>
> "It is a question whether tubercle admits of a microscopic diagnosis. Weld remarks that if pathological new-formation contains the elements of tubercle, and nothing else, it is purely tubercular new-formation. And this, it appears, to me, is the key to the microscopic diagnosis of tubercle. If the substance consists of the elements described as constituting the characteristics of tubercle, and is destitute of blood-vessels and a fibrous tissue, the substance can be nothing else than tubercle.
>
> "Morbid anatomists, from the days of Baillie to the present period, have described a fluid deposit as the primary state of tubercle. And this has been called, by recent writers, amorphous hyaline stroma, in which tubercle is found. It would appear, indeed, that this amorphous fluid is the true pabulum of tubercle—in other words, it is the morbid exudation in which the peculiar corpuscles constituting tubercle arise. The character of this exudation determines the nature of the subsequent growth, or development of the morbid substance; and, indeed, we observe that the same laws of development obtain here as else-

where. Thus, during ordinary inflammatory action, the exudation consits of fibrin, and the result is a growth corresponding with that element, in the cancerous cachexia, the exudation is of a peculiar character, which gives rise to cancer-cells. Indeed, the blastema or *cancer-juice* performs the same office in the development of malignant growths that the amorphous hyaline stroma does in the tubercle condition; the same laws of exudation and development of morbid growth pertain evidently to the two conditions, the special difference consisting in the elementary character of the exudation.

According to this view *tubercle* is an essentially morbid and *specific* exudation, appearing first in a fluid condition, in which the tubercle cell is developed, and is entirely independent in its formation of the surrounding tissues. And it is immaterial whether this tuberculous exudation takes place in the epithelial, as supposed by some, in the simple areolar tissue, or on free surfaces; for if the epithelial cells be the seat of exudation, they are completely destroyed, no vestige of their structure remaining. I would not deny that the nuclei of epthelia, as believed by Vander Kolk, might be nourished by the tuberculous fluid into tuberculous cells; nor would this fact change the bearing of the main question. The *pabulum* must determine the character of the growth, independent of surrounding tissues; hence inflammatory exudation gives rise to false membrane; the cancerous exudation to cancerous cells; the tuberculous exudation to tubercle cells; and so on with all morbid exudation." (pp. 40–1.)

The remaining portion of Part I is devoted to a consideration of the primary, secondary and tertiary lesions, consequent upon a development of tubercular deposits, concluding with a very interesting chapter upon the Nature of Phthisis, from which the following conclusions are deduced:

1. The tuberculous element originates in the metamorphosis of the tissues.

2. It seeks elimination through the lungs, and may continue to pass in certain quantities, for an indefinite period, without inducing local deposits.

3. When the morbid element reaches a certain degree of concentration, or when by long continued action, it produces a morbid effect on the lungs, local deposits take place.

4. The first deposit is the elementary morbid substance known as the amorphous stroma; this is followed by the development of molecular granules and peculiar cells, which constitute *tubercle.*

5. After the existence of solid tubercle for a given period, it softens, and the debris seeks elimination through the bronchial tubes.

6. The morbid action extends to the adjacent tissues, causes inflammation, softening and disintegration, too often resulting in fatal disorganization.

7. The perfect uniformity of tubercle throughout the body, in whatever tissue or organ deposited, exhibits strong evidence of the specific character of the disease, and that it could not originate from the ordinary derangements of nutirtion.

8. The chemical and histological character of tubercle favor the opinion that the whole process is specific in origin and development.

In treating of the causes which may induce phthisis independent of an hereditary predisposition, or, which favor its development where the connate tendency exists, the author devotes considerable attention to the influences of climate under the head of "The Geography of Phthisis," by which he intends "to indicate the natural prevalence of the disease among the permanent inhabitants of a given district of country, independent of its occurrence in transient persons, those who occupy prisons or belong to armies." This is a subject of very general interest, as it is a well established fact that climate plays an important part in the development of phthisis. Much vagueness exists upon this subject in the minds of medical men, and anything calculated to throw light upon it will be eagerly received. We propose, therefore, confining ourselves mainly in the remainder of the present notice, to an analysis of what Dr. Lawson has to say upon this and the kindred subject of the effects of a change of climate in arresting a development of the disease.

Extreme degrees of either heat or cold are unfavorable to the development of phthisis; therefore we would naturally expect to find it less prevalent in the frigid and tropic than in the temperate zones. Starting from the extreme points north and south, where its prevalence is at its minimum, we might be able, by careful observations, to establish a thermometrical line where the disease is at its maximum, and from which it would progressively diminish in each direction.

Parallels of latitude and range of thermometer can never be used, however, in an absolute manner to mark out the prevalence of phthisis, for local conditions will always exert a controlling power over its development. Among these the most important are moisture, altitude, habits of the people, etc.

A cold and moist climate will be unfavorable, whilst the reverse will prove true of a cold and dry, or warm and dry atmosphere.

Statistics, so far as it has been possible to obtain them, reveal the fact that phthisis is of rare occurrence beyond the sixtieth parallel of north latitude. This includes, in the Eastern Hemisphere, the greater portion of Sweden and Norway, Russia north of St. Petersburg, and Lapland; and in the Western Hemisphere, the northern half of British America, Russian America, Greenland, and Iceland. In the latter two countries it is almost unknown, in Russia it is much less common than in Great Britain, and in Sweden and Norway it is the cause of but a small proportion of the deaths. Iceland, the Fero Islands, and that portion of the American continent inhabited by the Esquimaux, are equally exempt from it. All localities in the Polar regions do not seem to be equally fortunate, as Finland and Archangel are said to furnish a large number of cases. The atmosphere at the latter place being unusually damp, may account for its being an exception to the general rule, but having had some experience in Finland and the northern portion of Russia proper, we are not prepared to believe that there is any marked difference, in regard to the prevalence of consumption, between the former country and other high latitudes. Among the troops quartered in Finland during the war between Russia and the Western allied powers, phthisis was not an uncommon disease, and proved a fruitful cause of death; but they were in the main Russians, as much unacclimated there as Americans would have been, and subjected at the time to the pernicious influences of crowded quarters and poor rations.

> "In examining the special qualities of these climates, in which phthisis appears to be so rare, we are forcibly impressed with their seeming incongeniality to consumptives, and the general harshness of their character. In Iceland the changes are rapid and extreme, with more frequent variations than occur on the continent; fogs are frequent, and the climate is necessarily damp. The food of the Icelanders consists chiefly of fish, bread, rancid butter, game, and, to some extent, the Iceland moss. Their habitations consist of huts, which are dark, damp, ill-ventilated, and very filthy. These are conditions which would not be supposed, *à priori*, to prevent the development of phthisis; on the contrary, the general laws of hygiene would lead us to expect that the cold, damp and variable climate, together with damp, filthy, and ill-ventilated habitations, and a diet deficient in nutritive qualities, should rather render the disease of common occurrence.
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> "Norway has likewise a variable climate. The food of the laborers consists of black rye bread and salted butter or cheese, for breakfast, boiled barley and fish, with beer, for dinner, and once or twice a week, fresh meat. Corn spirit is largely consumed. The same general remarks may be made in relation to Lapland: it is cold, damp, and variable, with ill-ventilated habitations and innutritious diet.
>
> "Here we may note an important fact. Phthisis is not common in the Arctic regions; but there we encounter a low and variable temperature, moist atmosphere, scanty diet, and ill-ventilated habitations. Why, then, is there exemption from phthisis?" (p. 203.)

In Europe phthisis is very common between the fiftieth and sixtieth degrees of latitude—including Great Britain, Prussia, Belgium, Holland, Middle Russia, Northern France, etc. The civil returns in England vary, and it is customary to class under the head tuberculosis, different forms of disease—scrofula, tabes mesenteria, phthisis, hydrocephalus—believing them to be related, which, taken together, give the following result:

	Proportion to Deaths.	Proportion to Population.
Tuberculosis in London, 1847, ...	1 in 6.1	1 in 215.4
" " " 1854, ...	1 in 5.6	1 in 241.6
" " " 1857, ...	1 in 6.2	1 in 251.9

Proceeding southward we find that those countries lying between the fortieth and fiftieth degrees of latitude afford no exemptions to the prevalence of phthisis. These are France, Austria, Turkey, Italy, Bavaria, Switzerland, Sardinia and one-half of Spain and Portugal. In Paris, according to returns by Bondin for twelve years, the proportion to the whole mortality is 1 in 5.3, greater even than London, but the *Departments* vary exceedingly. Those furnishing the largest number of cases, are situated in the extreme north of France, where the surface is level and extensive marshes are found. Morbihan and Mayenne, the former on and the latter near the coast of the Bay of Biscay, are the departments most free from this disease. In these the surface is elevated and intersected with mountain ranges. Generally throughout Germany, Italy and Spain, consumption is as common as in England and France. "At Munich, Berlin, Naples, Venice, Nice, Geneva, Madrid, Lisbon, Gibralter, the disease is evidently of very common occurrence. In the city and canton of Geneva, in 1838, phthisis was estimated to occur in the proportion of one in three hundred. Even the renown of Italy is evidently ill-founded, for consumption is known to be very common among its inhabitants. Dr. Catton remarks that he has been informed by a physician who long practiced in Italy, that the prevalence of consumption is generally acknowledged by the Italian physicians. Dr. Meryon declares that more *natives* die of consumption in Nice than in any town in England of the same population. Dr. Pollock states from his own personal experience, that in no country is phthisis so rapidly fatal as in Nice, Genoa, Florence and Naples." In Turkey phthisis is not rare, and according to Andral it is very common in the Mediterranean Archipelago.

In Asia phthisis is supposed to be less common in corresponding latitudes than in Europe. Statistics concerning its prevalence in that continent are limited and imperfect, but enough is known to make it pretty certain that portions of it are remarkably exempt. The Steppe of Kirghis, Persia, Syria and China, are so far as known " measurably free " from consumption. In India phthisis is more common and rapidly fatal in certain districts, as for instance Bengal, but other portions are nearly free from it.

In Africa phthisis is very rare so far as known. " Rochard terms Algeria the *promised land* of consumptives." In the French army stationed there, the proportion of deaths from consumption to the whole mortality is only 1 in 102. Egypt has been celebrated from an early day as being favorable to consumptives. The climate is warm, dry, and equable.

In the Southern Hemisphere Dr. Lawson says, " it seems tolerably certain that phthisis is more common than in corresponding regions north of the Equator."

According to statistics derived from the French and English navies, South America appears to be productive of phthisis. Chili is said to be very unfavorable to consumptives, and in the valley of La Plata the disease is not only very common but rapidly fatal. Peru is equally unfavorable. The above may be true of the coast, but as we approach the interior and get into the elevated regions leading to the Andes, phthisis is rare.

" In Tahati, the Marquesas and all Oceanica, the disease is declared to march with frightful rapidity, often destroying patients within four or five months."

In the United States it is difficult to arrive at accurate conclusions regarding the prevalence of phthisis, partly from the great extent of the country, and partly from the absence of perfectly reliable statistics. The territory embraced is of vast extent, including 20 degrees of latitude, and 55 of longitude. "It presents nearly every variety of climate, ranging from almost Siberian rigor to the heat of the tropics, and from an annual precipitation of forty-eight inches to arid regions almost without rain." Its humidity is necessarily variable. The Gulf region is exceedingly so. West of the Mississippi, the moisture is much less, east of the Mississippi, where south-east and south-west winds prevail, much more so. East of the Alleghany Mountains the atmosphere is comparatively cool and, owing to the vicinity of the ocean, humid. The Pacific coast is mild and humid, and the valleys inland dry and hot.

The following tables, derived from the census of 1850, will exhibit the proportion to total mortality and population of those who die of phthisis in each State, the whole country being divided for sake of convenience into four artificial divisions, called the Eastern, Middle, Western and Southern:

EASTERN DIVISION.

	Proportion to Deaths.	Proportion to Population.
Maine,	1 in 4.4	1 in 341
Vermont,	1 in 4.15	1 in 417
New Hampshire,	1 in 4.5	1 in 343
Massachusetts,	1 in 5.6	1 in 287
Rhode Island,	1 in 4.7	1 in 310
Connecticut,	1 in 5.9	1 in 385
Mean,	1 in 4.8	1 in 347

MIDDLE DIVISION.

	Proportion to Deaths.	Proportion to Population.
New York,	1 in 6.6	1 in 440
New Jersey,	1 in 7	1 in 508
Pennsylvania,	1 in 8	1 in 641
Delaware,	1 in 10	1 in 603
Mean,	1 in 7.9	1 in 548

WESTERN DIVISION.

Free States.

	Proportion to Deaths.	Proportion to Population.
Ohio,	1 in 11.3	1 in 764
Indiana,	1 in 11.8	1 in 913
Illinois,	1 in 13.5	1 in 976
Michigan,	1 in 6.5	1 in 602
Wisconsin,	1 in 10	1 in 1050
Iowa,	1 in 12.8	1 in 1206
Mean,	1 in 10.9	1 in 911

Slave States.

	Proportion to Deaths.	Proportion to Population.
Kentucky,	1 in 11.6	1 in 770
Tennessee,	1 in 13.5	1 in 1133
Missouri,	1 in 19.4	1 in 1081
Arkansas,	1 in 22	1 in 1585

SOUTHERN DIVISION.

	Proportion to Deaths.	Proportion to Population.
Maryland,	1 in 8.7	1 in 529
Virginia,	1 in 11.7	1 in 886
N. Carolina,	1 in 18	1 in 1546
S. Carolina,	1 in 52	1 in 4369
Georgia,	1 in 35	1 in 3246
Florida,	1 in 21.6	1 in 2033
Alabama,	1 in 24.8	1 in 2131
Mississippi,	1 in 19.7	1 in 1826
Louisiana,	1 in 18.6	1 in 807
Texas,	1 in 27.2	1 in 1898

From the foregoing statistics, some of which are said to be corroborated by State and corporation authorities, we are to infer that phthisis is of less common occurrence in the southern than in the northern portions of our country, and that it gradually diminishes from Maine to Florida. In the Eastern Division the mortality from phthisis may be put at 1 in 326; in the Middle Division, 1 in 519; in the Western Division, 1 in 882; in the Southern Division, 1 in 1287.

In the West Indies, so far as known, phthisis is more common than in the southern portion of the United States, and the climate of the island of Cuba, instead of being favorable, as is generally supposed, is unfavorable to foreigners suffering with this disease, and particularly in the latter stages.

From the foregoing it will be seen that opposite conditions of temperature are supposed to exercise a similar influence in preventing a development of tuberculosis, and we add the author's opinion as to the manner in which this common result is reached from such widely dissimilar starting points.

He supposes the origin of tuberculous matter to be in some wise connected with the metamorphosis of the general tissues, and thinks it a fair inference "that the influences of heat and cold in protecting the system against the tubercular diathesis, operates by virtue of the diminished transformations of the tissues, depending, in one case, on the protective agency of carbon, and in the other, on the depressing effects of cold. In either case the metamorphosis of the tissues becomes comparatively slow, and the tuberculous material scantily supplied."

Part III is devoted to a statement of the symptoms of phthisis. For the sake of clearness the disease is divided into four stages: 1. The precursory stage. 2. The stage of tubercular deposits. 3. The stage of softening. 4. Stage of evacuation. The symptoms and signs, both rational and physical, accompanying these different stages, are considered so clearly that no one can fail to be benefited by a preusal.

Part IV is devoted to the treatment of phthisis, and is arranged to correspond with the divisions of the preceding part.

In the precursory stage of phthisis, a condition independent of pulumonary disease, and the one in which we may hope to be of the greatest benefit to patients, the management should be mainly hygienic, consisting of a proper regulation of the mode and habits of life, exercise, diet, clothing, change of climate, and when needed, tonic medication.

This leads us to consider briefly the effects of a change of climate upon those afflicted with phthisis. Undoubtedly the effect of a change of locality is beneficial to any one debilitated with chronic disease of any kind. New impressions are made, the mode of life is changed, and the exhausted nervous system rallies, sometimes with wonderful rapidity. Persons enfeebled by the action of tuberculous disease form no exception to this rule, but generally derive some advantage from any change of climate they may make.

As general rules, the following will no doubt be found in the main correct:

Excessive cold being depressing, and a high degree of heat debilitating, extremes of temperature should be avoided. Patients in the incipient stage of the disease should be directed to warmer regions, avoiding long continued "monotony of atmosphere," by changing from a warm to a cooler climate, when the former becomes depressing.

Upon general principles avoid sending patients in this stage of the disease to those localities where phthisis is of common occurrence among the native population.

When the disease is advanced to what is called the stage of softening, a mild, equable, and moderately dry climate, will be found the most desirable. In such a temperture patients can exercise freely in the open air, without danger of inflammatory diseases from cold. So far as moisture is concerned, a medium condition is preferable. An atmosphere ladened with moisture soon becomes oppressive, and too much dryness induces irritation of the mucous membrane of the air passages. "Hence mountains on the one hand, and plains or sea-shores on the other, are equally to be avoided."

In selecting particular localities, these general rules must be our guide.

In Europe, patients are directed to the south of France, Italy, and the Island of Madeira. The latter has been styled the *City of Refuge* for consumptives, and its reputation is superior even to that of Egypt. Statements regarding the benefits to be derived from a residence on the island are very conflicting, but Dr. Lawson says that "facts justify the conclusion that the Island of Madeira, although scarcely the city of refuge for consumptives, is highly favorable to that class of patients, especially those not advanced beyond what is called the first stage."

In the United States, the general tendency is to send patients to Florida, Texas, Louisiana, Cuba, the Lake Superior region, and latterly, Minnesota. Florida and Texas being the more common. In the former, the climate is warm, moist and debilitating, and therefore unfavorable. The interior of Texas affords a much more desirable climate, and it is a concluded fact that it is favorable to consumptives.

New Mexico, embracing Santa Fe, is mentioned as being favorably, if not certainly "more favorable to consumptives than any point on the American continent, if not in the civilized world." It is remarkable for its dry, pure atmosphere, and is called one of the most salubrious regions in North America.

Sea voyages have ordinarily been regarded favorably as a means of relief to consumptives. Mr. Rochard, the most recent writer upon this subject, thinks differently. Before closing, we would call attention to the following conclusions taken from his work, entitled *De l'Influence de la Navigation, et des Pays Chauds sur la Marche de la Phthisic Pulmonaire.*

1. Sea voyages must more frequently accelerate than retard phthisis.

2. Instead of being rare among mariners, it is much more frequent than in the army.

3. Generally, phthisis marches with more rapidity on board ships than on land.

4. The naval profession should be interdicted to persons threatened with phthisis.

5. Consumptives might receive some advantage from navigation, under fovorable hyigenic conditions, such as change of climate, with favorable seasons, which cannot be secured on board vessels with particular destinations. Land journeys, favorably chosen, and prolonged sojourns, may be beneficial.

6. Hot countries exercise an unfavorable influence, and hasten its course.

7. Countries situated under the Torrid Zone (hot properly speaking), exercise this unhappy influence, and a sojourn in them should be interdicted.

8. Most hot countries situated outside the Torrid Zone, are especially prejudicial.

9. Only in the first stage can we counsel emigration.

SICKNESS AND MORTALITY IN THE U. S. ARMY.

Statistical Report on the Sickness and Mortality in the Army of the United States. Compiled from the Records of the Surgeon-General's office, embracing a period of five years, from January, 1855, to January, 1860. Prepared under the direction of Brevet Brigadier-General THOMAS LAWSON, Surgeon-General U. S. A., by RICHARD H. COOLIDGE, M.D., Assistant Surgeon U. S. A. Washington, 1860. (pp. 515.)

WE are indebted to Surgeon-General Thomas Lawson for a copy of the above Report. It is a continuation of similar Reports, commencing with the organization of the Army Medical Bureau, the first of which appeared in 1840, embracing a period of twenty years, from January, 1819, to January, 1839; the second in 1856, embracing a period of sixteen years, from January, 1839, to January, 1856: all of them being published by order of the Senate, to which body our profession is under many obligations for giving to the world, in a permanent and accessible form, a mass of valuable statistics and observations, which have been contributed by the medical officers of our army from all portions of our vastly extended country.

> "For the purposes of this report, the military posts of the United States have been arranged in the following geographical divisions: The Northern Division, which includes that portion of the United States lying north of the fortieth degree of latitude, and east of the Rocky Mountains; the Middle Division, that portion lying between the thirty-fifth and fortieth parallels of latitude; the Southern Division, that portion lying between the thirtieth and thirty-fifth degrees of latitude. In addition to these, are the Divisions of Florida, Texas, New Mexico, California, Oregon, and Washington Territory and Utah.
>
> "These principal divisions have been subdivided into regions, each distinguished by peculiar local or climatological features."

The volume consists of Reports on the Sickness and Mortality among United States troops stationed in these various divisions, of tables exhibiting the amount and ratio of this sickness and mortality, and meteorological registers.

As a specimen of the very interesting nature of the work, we make some extracts from the Sanitary Report of Utah Territory, by Assistant Surgeon Barthlow. He speaks highly of the salubrity of the climate of this territory, but doubts whether this be a sufficiently redeeming quality to compensate for its general barrenness and want of interest. The valleys by the mountain streams are the only habitable portions, and even here the "labors of life are at the maximum and the recreations at the minimum." The soil is in itself sufficiently productive, but the absence of rain, and the scarcity of water for irrigation, prevent the growth of crops. "Another circumstance influences the quantum of production. In many situations, the soil contains a very large percentage of the soda, potash, and magnesian salts, and is in consequence hopelessly barren. The crops on the fertile and cultivated portions of the country, are not unfrequently destroyed, by a sudden and unaccountable increase in the quantity of these salts."

The most notable meteorological feature is the prevalence of high winds, whirlwinds sweeping along the valleys, carrying up columns of sand and dust.

> "Mormonism, as a great social solecism, seriously affecting the physical stamina and mental health, is full of interest to the medical philosopher. Isolated in the narrow valleys of Utah, and practicing the rites of a religion grossly material, of which polygamy is the main element and cohesive force, the Mormon people have arrived at a physical and mental condition, in a few years of growth, such as densely-populated communities in the older part of the world, hereditary victims of all the vices of civilization, have been ages in reaching. This condition is shown by the preponderance of female births, by the mortality in infantine life, by the large proportion of the albuminous but gelatinous types of constitution, and by the striking uniformity in facial expression and in physical conformation of the younger portion of the community."

The writer thinks if Mormonism received no additions from outside sources, the vitiating influences of their peculiar mode of life would eventually cause it to die out.

> "The Mormon theology contemplates the cure of disease by miraculous interposition, hence the disciples of the healing art are not held in much estimation. The church authorities are exceedingly jealous at an attempt to cure by ordinary therapeutics, and denounce from the pulpit any invasion of their special province. Though they claim for the 'laying on of hands' wonderful efficacy, the number of deformities, the result of malpractice, to be seen in any of the populous towns, rather indicates a necessity for the use of carnal means. The art of surgery is at a low ebb. Epidemic erysipelas of a virulent form is reported to prevail in this Territory, but, thus far, no cases of the disease have fallen under the observation of the medical officers serving with the army."

Mountain fever is the only disease which prevails presenting features peculiar to that region. The author of this report regards it as the product of malaria, assuming generally a periodical character, and ordinarily relieved by the use of quinine.

There is much more in this and other reports we would be glad to notice, but cannot now do so. Those wishing to obtain a copy, can no doubt do so by applying to their Representative in Congress.

HOLMES ON CURRENTS AND COUNTER-CURRENTS.

Currents and Counter-Currents in Medical Science, with other Addresses and Essays. By OLIVER WENDELL HOLMES, Parkman Professor of Anatomy and Physiology in Harvard University, etc. Boston: Ticknor and Fields, 1861. (pp. 406.)

THIS is a pleasant volume of medical miscellanies. Dr. Holmes always writes with both pith and point, and dulness and obscurity are to him the cardinal sins of composition. The suggestiveness and vivacity of his style have made him of late the most successful magazine writer of our country; and, indeed, many of his admirers find in the series of papers he has published in the *Atlantic Monthly*, all the racy humor and plastic power with which Christopher North made old Ebony so glorious.

Voltaire said that whatever was not clear was not French; with equal justice may it be said, that whatever is dull and feeble is not Holmes's. The reader of this brilliant essayist and lecturer must guard himself, however, carefully against the extreme to which his author's love of paradox and antithesis so frequently would carry him, and in estimating the value of the scientific conclusions presented, he must make due allowance for the natural variation of the wit and the fact. The Address which was delivered before the Massachusetts Medical Society in May, 1860, and which gives this volume its title, has excited much criticism, even to the extent of causing the impeachment of the medical orthodoxy of Dr. Holmes. He avows himself on the side of nature (that is, trust in the reactions of the living system against ordinary normal impressions) against "art," and declares that the community is overdosed by the advocates of complex medication. It is true that the noble army of martyrs whom we call patients are in good part to blame, and most pertinaciously insist on being poisoned. "A French patient complains that his blood heats him, and expects his doctor to bleed him. An English or American one says he is bilious, and will not be easy without a dose of calomel. A doctor looks at a patient's tongue, sees it is coated, and says the stomach is foul; his head full of the old saburral notion, which the extreme inflammation-doctrine of Broussais did so much to root out, but which still leads, probably, to much needless and injurious wrong of the stomach and bowels by evacuants, when all they want is to be let alone. It is so hard to get any thing out of the dead hand of medical tradition! The mortmain of theorists extinct in science, clings as close as that of ecclesiastics defunct in law."

Dr. Rush is condemned as one of the high-priests of the "heroic" practice, which found so ready an acceptance from the exaggeration of American character. One of Dr. Holmes's propositions is, that "the presumption always is that every noxious agent, including medicine proper, which hurts a well man, hurts a sick one." Medicine, he contends, is always directly hurtful; but it may be sometimes beneficial. "Throw out opium, which the Creator himself seems to prescribe, for we often see the scarlet poppy growing in the cornfields, as if it were foreseen that wherever there is hunger to be fed there must also be pain to be soothed; throw out a few specifics which our art did not discover, and is hardly needed to apply; throw out wine, which is a food, and the vapors which produce the miracle of anæsthesia, and I firmly believe that if the whole materia medica, *as now used*, could be sunk to the bottom of the sea, it would be all the better for mankind —and all the worse for the fishes!"

In this sentence we may recognize "the fever-throbs of conceit and the nervous palpitation of rhetoric," for what valid reason could be assigned for the signal selection of opium because the poppy abounds, any more than quinine or sulphur? and the statement that wine is food, in the light of recent research, would appear to lack scientific confirmation.

A large portion of this volume is devoted to a very entertaining and exhaustive criticism of Homœopathy and its kindred delusions. He gives an amusing sketch of the rise and fall of "Perkins's Tractors," and institutes a critical comparison between that exploded quackery and the doctrine of infinitesimals and potencies, which he pronounces "at once the most epigrammatic of paradoxes, and the crowning exploit of psuedo-scientific audacity."

Puerperal Fever, as a private pestilence, has been one of our author's pet subjects, and he has republished here two essays upon that theme. Dr. Hodge and Prof. Meigs deny that any virus exists in puerperal fever which is contagious; Dr. Holmes asserts that it is frequently carried from patient to patient by physicians and nurses, and he produces a large number of cases to prove his position. The subject is one of great interest, though the comparative rarity of the disease diminishes its practical value. Holmes argues ably and eloquently upon the question, and concludes: "From the facts I have exposed, it appears that the medical attendant has a power of doing mischief which has sometimes proved enormous. He may carry a pestilence about with him from house to house that shall kill more women in a month than he is like to save in his whole life; there is too great reason to fear he has done so often—that there have been those who, with a smile on their face, have carried death from bedside to bedside, sometimes ignorantly and innocently, but sometimes negligently if not criminally; but compared to whom Toffaun was a public benefactress, and the Marchioness of Brinvilliers a nursing mother."

Dr. Holmes concludes this volume with his Valedictory Address to the medical graduates of Harvard University, delivered in March, 1858. It is a sensible, practical and eloquent effort, inculcating the necessity of a good physician's being a good man, and of his cherishing a high standard of professional honor and duty. He tells them, *Respect your profession!* "If Sir Astley Cooper was ever called to let off the impure ichor from the bloated limbs of George the Fourth, it was the King who was honored by the visit, and not the Surgeon. If you do not feel as you cross the millionnaire's threshold that your Art is nobler than his palace, the footman who lets you in is your fitting companion, and not his master."

One more quotation on the inculcating of diagnoses: "Sooner or later, every body is tripped up in forming a diagnosis. I saw Velpeau tie one of the carotid arteries for a supposed aneurism, which was only a little harmless tumor, and kill his patient. Mr. Dease, of Dublin, was more fortunate in a case which he boldly declared an abscess, while others thought it an aneurism. He thrust a lancet into it, and proved himself in the right. Soon after, he made another similar diagnosis. He thrust in his lancet as before, and out gushed the patient's blood and his life with it. The next morning Mr. Dease was found dead and floating in his own blood."

This volume will command a large circle of admiring readers outside of the medical profession, and some of the ringing sentences of the author will be construed by the inconsiderate and the ignorant as confessions of the fatality of the science and practice of medicine. The present popularity of "The Autocrat," we trust, will not seduce him into the easily besetting sin of book-making—a result that very frequently attends the footprints of the versatile genius.

MANUAL OF MILITARY SURGERY.

A Manual of Military Surgery; or, Hints on the Emergencies of Field, Camp, and Hospital Practice. Illustrated with Wood cuts. By S. W. Gross, M. D., Professor of Surgery in Jefferson Medical College.

> "L' occasion est urgente, le pragement difficile."
> "For want of timely care millions have died of medicable wounds."

Philadelphia: J. B. Lippincott & Co., 1861. (pp. 186.)

The book, bearing the above title, is the child of the hour, acknowledging, "L' occasion est urgente," and as briefly and promptly as possible providing for it. Its modest claims as set forth in the Preface, will be fully allowed by any one who gives it a careful reading. After a short historical sketch of Military Surgery, the author devotes another chapter to its importance, exceedingly suggestive to the public and the profession. None would gainsay its value, or deny that a too high estimate was placed upon it, when the author assumes that "no men of any sober reflection would enlist in the service of their country, if they were not positively certain that competent physicians and surgeons would accompany them in their marches on the battle-field, ready to attend to their diseases and their accidents." But will those who have carefully prepared themselves for its mighty responsibilities, and have faithfully met and discharged the grave duties of their position in army and navy, accept the opinion that "military medicine and surgery has always occupied a deservedly high rank in public estimation?" If this may be admitted, may we not at least boldly assert that physicians and surgeons, occupying such important positions, and performing such *essential* service, have never been rewarded, or "ranked" justly with other army and navy officers? Have not their qualifications for their specialty been as severely tested, and have they not on all occasions been as faithful at their posts? Have not fewer in this arm of the service been cashiered for faithlessness or unworthiness than any other, and yet have they met the consideration either in public opinion, in official dispatches, or in rank, that they deserve? This is too suggestive a topic to discuss in this place.

Chapter III., on "Qualifications and Duties of Military Surgeons," boldly asserts the paramount importance of receiving into the public service none but men of the best talent and highest education, and recommends an increased rigor in the already rigid examinations of the army and navy boards. "An equal vigilance should be exercised in regard to the introduction of physicians and surgeons into the volunteer service." Of the character of men suited for these places we may judge from the following picture by the author: "He must be more than a mere physician; he must be both physician and surgeon, in the true sense of the terms, otherwise he would be unfit, totally unfit for his position. He must have been educated in the modern schools; be of undoubted courage, prompt to act, willing to assume responsibility, humane and sympathizing, urbane and courteous in his manners; in short, a medical gentleman as well as a medical philosopher, not hesitating, if need be, to perform the most menial services, and to do all he can to preserve the life and health of the soldiers committed to his care. The white-gloved gentry, such as figured in some of the regiments that went to Mexico, have no business in the service." Those having appointing power are called upon to "see that the medical staffs of the brave volunteers of the country be not defiled by charlatans and unworthy men, between whom and the regular practitioners there cannot possibly be any professional, much less social intercourse in civil or military practice." The duty of detailing, *before battle*, a sufficient number of men to render prompt assistance to the wounded, in carrying them off the field, and providing all hospital accommodation; to be watchful of the first, and every call demanding their help, giving his first attention to the officers and men of his own corps, but not confining them, as he may be able, even to those on his own side in the contest—as often the wounded of the enemy may be cast for the time on his care—all these are duties pressed upon the attention of the medical officer of the service.

"Medical Equipments, Stores and Hospitals" are briefly but clearly presented in the next chapter; and this is followed by one on "Wounds and other Injuries," comprehensive, practical, and suggestive; taking for granted that the army surgeon is familiar with the nature, diagnosis, and treatment of the lesions with which he must come in contact on the field of battle. In the remaining chapters, the most important subjects that must occupy the attention of the military surgeon are brought clearly and distinctly to his memory, and the most approved management of modern science suggested.

We feel assured that we are but expressing, in advance, the grateful acknowledgments of those for whom this little, unpretending volume was intended, when we say that it is a most valuable "Remembrancer" of important and essential facts and principles, is well timed, and presented in an attractive form by the publishers.

PART II.—ESSAYS AND CORRESPONDENCE.

THE WAR—MEDICAL JOURNALS NORTH AND SOUTH.

The brief notes on the war in most of the Medical Journals, North and South, are in accordance with the great characteristics of the two sections, and of course deeply tinged with the intense political spirit prevalent. As part of the medical history of the times, we make a few quotations.

The Atlanta Med. and Surg. Journal, speaking of the meeting of the American Medical Association, says:

> "Will our contemporary of the Nashville Journal of Medicine and Surgery, in another non-sectional flight above 'every line and landmark drawn by the political deplomatist,' tell us how he proposes to avoid annoyance from abolition mobs, while in Chicago, short of favoring Lincoln's government? There *may* be some who desire to go, in the enjoyment of cherished principles connected with our new Confederacy; and while the Editor of the above Journal 'hopes to see a large meeting at Chicago in June next,' he should inform the profession that something more than the 'unsullied habiliments' of the physician has recently been found necessary to protect Southrons from the assaults of abolition fanatics in Northern cities. In the present state of society North, our opinion is that the 'habiliments' of *war*, for Southern men going North with Southern principles, would be an appropriate panoply. And while we think, from information we have had, that the Editor and his *confreres* in the college may be able to furnish a full corps of delegates whose political sentiments will not be objected to at Chicago, we know of many Institutions not thus situated."

The New Orleans Med. Times, is eminently *sectional* and national by turns in his politics; but finally concludes with its announcement of free faith in "State rights" *medicine*, as well as governmental policy, as follows:

> "In regard to the Medical Department of this general revolution, it is well enough to recall to mind that, in 1844, Drs. Fenner and Hester, the founders of the New Orleans Medical Journal, openly proclaimed, in their first number, *that the peculiarities of Southern Diseases required a corresponding modification of treatment*

which was known only to Southern practitioners, and could not be learned from Northern teachers. The declaration of this great truth was denounced at the North as 'State Rights *medicine.*" At the inauguration of the New Orleans School of Medicine, in 1856. the same opinion was set forth in still bolder terms, and from that time it has been evident to all that a revolution was going on in the medical profession of this country. The Medical Colleges of the South were more extensively patronized from year to year, and the opinion was steadily gaining ground that medical students destined for Southern practice had better be educated in the South. Still, the prestige of the ancient Medical Schools of Philadelphia and New York attracted the greater part of the best Southern students, and this continued until the secession of 1859, '60, when an emeute occurred at the Jefferson Medical College, which brought the question almost to a crisis. At the session just closed, the number of Southern students at the North fell off about *one-half*, and now that the fatal blow has been given to the Constitution and the Union, and the entire South is forced to defend herself against the ruthless invasion and oppression of the North, it is hardly to be expected that a single Southern student will hereafter attend the Northern Medical Schools."

Our northern jounals chiefly confine themselves to the medical and surgical duties of the profession, but with warm expressions of patriotic ardor for their country and their whole country. They manifest the deepest interest that the soldiers of the "Union" should be cared for by skillful, experienced and devoted surgeons.

MEDICAL APPOINTMENS TO THE OHIO REGIMENTS OF VOLUNTEERS.

THE Board of Medical Examiners, composed of Profs. J. W. Hamilton. Whiting and Blackman, appointed by the Governor to examine applicants for the places of surgeons and surgeons' mates to the volunteers furnished by the State to the General Government, held its first meeting in Columbus, April 29th. The Board adopted the rule that no person could be examined for surgeon who had not a diploma from a regular school, and practiced ten years; five years' practice was required of the candidates for surgeons' mate. The examination was made by written questions and answers. The following were recommended after the first examination, for surgeons: S. Loving, M.D. and C. E. Boyle, M.D., Columbus; J. A. Coons, M.D., Dayton; O. Ferris, M.D., Upper Sandusky; J. F. Gabriel, M.D., Piqua; J. A. Kyle, M.D., Xenia; H. M. McAbee, M.D., Canton: C. S. Muscroft, M.D., Cincinnati; J. D. Robinson, M.D., Wooster; Benj. Tappan, M.D., Steubenville; S. D. Turney, M D., Circleville.

Surgeons' Mates: E. D. Hill, M.D., Oxford; R. Wirth, M.D., Gilboa; F. W. Ames, M.D., Cincinnati; H. Z. Gill, M.D., Columbus; S. Sexton, M.D., Cincinnati; John B Rice, M.D., Fremont; W. K. Shrift, M.D., Putnam Co.; C. H. Swain, M.D., Toledo; H. H. Seyes, M.D., Springfield; F. Salter, M.D., Fayette Co.; D. S. Young, M.D., Cincinnati, F. D. Morris, M.D., Hamilton.

At the second meeting of the board, held in Columbus May 10th, the following gentlemen were recommended for surgeons: C. A. Schwartzwilder, M.D., Ironton; Douglas Day, M.D., Zanesville; G. L Meyer, M.D., Cleveland; B. B. Brasher, M D., Canal Dover; W. W. Ames, M.D., Orrville.

Surgeons' Mates: W. C. Daniels, M.D., Toledo; T. J. Cleveland, M.D., Cleveland; W. H. Drury, M D., Columbus; C. F. Denig, M.D., Grove City; C. J. Bellows, M.D., Jefferson; J. M. Morrow, M.D., Mansfield.

Drs. McDermont, of Dayton, McMeens, of Sandusky, and McMillen, of Columbus, were appointed by the Governor before the assembling of the Medical Board. They are well qualified. Drs. J. D. Webb, of Cincinnati, Wilson, of Sidney, and Greenleaf, of Cincinnati, were also appointed Surgeons' Mates at the same time by the Governor.

At present, Drs. McDermont and Webb are serving with the Second Regiment; Drs. McMillen and Wilson, with the First; Drs. R. R. McMeens and Seyes, with the Third; Drs. McAbee and Cantwell with the Fourth; Drs. Ball and Greenleaf, with the Fifth; Drs. Loving and Ames, with the Sixth; Drs. Cushing and Salter, with the Seventh; Drs. Tappan and Sexton, with the Eighth; Drs. Muscroft and Wirth, with the Ninth; Drs. Boyle and Rice, with the Tenth; Drs. Gabriel and Hill, with the Eleventh; Drs. Holmes and Swain, with the Twelfth; Drs. Turney and Shrift, with the Thirteenth; Drs. Coons and Young, with the Fourteenth; Drs. Ferris and Drury, with the Fifteenth; Drs. Robinson and Denig, with the Sixteenth; Drs. Kyle and Cleveland, with the Seventeenth; Drs. Schwartzwilder and Mowry, with the Eighteenth; Drs. Brasher and Morris, with the Nineteenth; Drs. Hill and Bellows, with the Twentieth; Drs. W. W. Ames and Daniels, with the Twenty-first; Dr. Douglas, with the Twenty-second.

The inconvenience of calling this Board together from such distant points, has induced the Governor to change the commission by uniting Dr. Wm. M. Awl, and Prof. S. M. Smith, with Prof. Hamilton, all residents of Columbus.

A NEW ANÆSTHETIC.—In a letter to the *Lancet*, Dr. John Wilnehurst, surgeon to one of the Cunard line of steam-ships, states that, in the absence of the accredited anæsthetics, he tried the vapor of the rectified oil of turpentine. His first case was an attack of severe supra-orbital neuralgia. He administered in the usual form the turpentine, and after a few inhalations, the patient slept gently, and when she awoke was free from all pain. He has repeated it in a number of other painful diseases, and found it equally successful, and commends it to the attention of the profession for further trial, that his experience may be confirmed or successfully refuted.

NECROLOGICAL.—During the present year a large number of distinguished members of the medical profession have been called from their post of duty and labor, some in a good ripe old age and full of honors. Of these, the earliest in the year, and of world-wide note, we record Dr. FREDERICK TIEDEMAN, formerly Professor of Anatomy and Physiology in the University of Heidelberg, who died, on the 22d of January, at Munich.

Dr. THOMAS HARRIS, of Philadelphia, the oldest surgeon in the American Navy, for many years Surgeon in the Pennsylvania Hospital, Member of the Board of Army and Navy Examiners, a very successful operator, and a gentleman of urbane and affectionate manners, died on March 4th, at the age of seventy-eight.

Of British physicians, Dr. BALY, physician extraordinary to the Queen, a gentleman fast rising in reputation, as practitioner, translator and lecturer, was suddenly killed by a railroad accident.

In our own country, Dr. E. J. FOUNTAIN, of Davenport, Iowa, died on the 29th of March, in the 33d year of his age, a victim to his own zeal in medical investigations.

In our State, Dr. MOREHEAD, of Zanesville, one of the older practitioners of Central Ohio, reputable, beloved, and the "sole of honor," died of fatty degeneration of the heart on the 26th of April.

In New York city, Dr. JNO. W. ERANCIS, in May, "a bright, particular star" in medicine, and social life.

PART III.—FOREIGN SELECTIONS.

CANCROID OF THE RECTUM—EXTIRPATION BY LIGATURE.

[Translated for the Columbus Review, from the Gazette des Hopitaux.]

On the 23d of last July, a patient was dismissed from *l'hopital de la Pitié*, upon whom M. Maisonneuve had performed, on the 14th of May previous, an operation for the removal of a cancroid growth situated at the lower extremity of the rectum.

This case appears to us to be of importance, not only on account of its happy and complete successful termination, but also on account of the simple and ingenious manner in which the operator proceeded in performing the operation.

When we remember how much patience and dexterity were required, how much danger from hemorrhage was encountered, in performing this operation, even after the ingenious method of Lisfrance, we are surprised to see how easy it can be made by the most simple manœuvre, and how the dangers from hemorrhage and purulent infection are almost entirely removed.

In his memoire upon the use of the *ligature extemporaneé*, M. Masionneuve has detailed four other cases of a like nature.

R——, journalist, æt. 60, came to the hospital de la Pitié, on the 25th of April, 1860, for the purpose of being treated for a carcinomatous tumor of the inferior extremity of the rectum.

He stated that it had been three years since he had felt the posterior part of the rectum to be indurated, and that during a stay in another hospital this had been removed.

A short time afterwards the trouble returned, when he went to the same hospital, where the diseased portion of the rectum was again removed; this was followed by another return of the disease. When the patient presented himself at the wards of M. Maisonneuve, the tumor was about as large as the hand; it was hard and lobulated, occupying two-thirds of the circumference of the rectum, the anterior part extending upwards about two inches; there was no ulceration, but it was the seat of lancinating pains.

The operation was performed on the 14th of May in the following manner:

The patient was placed on his right side, the right leg extended, the left flexed. M. Maisonneuve then made an incision through the integument around the external circumference of the tumor.

Through this incision he introduced seven threads nearly an inch apart, one of the ends passing out through the anus. Each of these threads served to pass a piece of doubled twine. The tumor was thus surrounded by a series of arches, formed by the twine. It was then an easy matter, by drawing upon the ends of two of these pieces of twine at the same time, to divide the tissues embraced. This was accomplished without giving rise to the least hemorrhage, and the immense wound thus formed being filled with lint.

After this grave operation inflammatory reaction was but slight, suppuration was soon established, the wound became filled with healthy granulations and cicatrization commenced.

In consequence of the loss of the inferior extremity of the intestine there was no movement of the bowels, but as soon as cicatrization began this difficulty disappeared, and on the 23d of July the patient was discharged cured.

EFFECT OF MUSIC ON THE SICK.—The effect of music upon the sick has been scarcely at all noticed. In fact, its expensiveness, as it is now, makes any general application of it out of the question. I will only remark here, that wind instruments, including the human voice, and stringed instruments, capable of continuous sounds, have generally a beneficial effect—while a pianoforte, with such instruments as have no continuity of sound, have just the reverse. The finest pianoforte-playing will damage the sick, while an air like "Home, sweet Home," or "Assisa el pie d'un salice," on the most ordinary grinding organ, will sensibly soothe them—and this is quite independent of association. —*Florence Nightingale.*

MEDICO-LEGAL STUDIES

ON THE

Perversion of the Moral and Affective Faculties in the Precursory Period of General Paralysis.

BY A. BRIERRE DE BOISMONT.

[Read before the Institute of France, September 24th, 1860.]

There are few phenomena of greater interest to the physician and the moralist, than the change which insanity impresses upon the character, the disposition and the temperament. It might be said that a magic wand had brought about the metamorphosis, so often does this happen rapidly. That man who was grave, punctual, reserved, economical, and devoted to others, becomes giddy-brained, vacillating, dishonest, wasteful, and an egotist. This man, whose discretion had gained the confidence of all, whose winning manners and happy disposition had been the charm of domestic life, casts to the wind the trust which had been reposed in him, and becomes malignant, brutal, a railer and insolent. Can it be that a little more blood flowing towards the brain, or a more lively excitation of the nervous system, gives rise to these anomalies, and throws up to the surface evil instincts aforetime hidden, as it would seem, from observation? But are not these elements of causation the same that we invoke to explain acts of heroism, sublime deeds, and creations of genius? Evidently if the elements are similar, they must be modified or combined differently in the two cases. In the arrangement of these modifications rests the enigma of the cause of those pathological lesions of which, up to that point, the effects have been demonstrated; and this enigma is not of a nature to be quickly solved. As to the anatomical lesion that is found so constantly in general paralysis, we cannot attribute to it the moral disorders witnessed in the progress of the disease, since these are observed in other forms of mental alienation which, up to the time when these disorders have become apparent, have not presented any appreciable anatomical change; or if such a change exists, it has no relation to the moral symptoms referred to. Moreover, in paralytic insanity the moral disturbance occurs many years before the malady is suspected.

Insanity manifests every moment the transformations spoken of. They are common in the paroxysms of maniacal excitement which resemble drunkenness; they are observed also in the moral insanity of the English, and in our reasoning manias (*folies raisonantes*), etc.

We shall study these transformations here solely in relation to paralytic insanity, better known under the name of general paralysis of the insane.

One of the first and most constant of the appreciable indications of intellectual disturbance, is the change of character, which consists ordinarily in greater irritability, and in movements characteristic of impatience, anger and violence. If the disposition be naturally of this quality, the characteristics become much more conspicuous, exciting the attention of relatives and friends. This moral perturbation may persist six months, or one, two, or three years, without any concomitant symptoms.

Under other circumstances, the derangement of the mind is announced first by extravagant talk. A clerk, necessarily in contact daily with hundreds of persons whose observation he could not escape, was invited to a wedding. All at once he began to converse in the most extraordinary manner, and exhibited a mobility of ideas that could not be checked. Sometimes the disorder of the faculties is revealed by acts. A wife, an excellent manager, made purchases out of all proportion to her resources. She despaired, and attempted to kill herself. Shortly afterwards general paralysis became evident. Often we have noted, as the first indication of evil, the menace of suicide.

The change of character may present many varied shades. Four years before the invasion of paralysis, a man who had up to that time been habitually firm, became irresolute, uncertain, and wept readily, although he still managed to conduct his business well for a period of three years. At the end of that time another change came over his disposition; he became irritable, fiery, and choleric Paralytic insanity succeeded these two metamorphoses.

It is not uncommon to observe, in place of the choleric irritability just mentioned, a placidity or an apathy which results in the individual's being diverted from all serious occupation. We have observed six instances of this kind. The relations, amazed, ceased not to comment and to animadvert upon the grave consequences of this conduct; the patients calmly admitted the soundness of the reasoning, but averred that it was impossible for them to do anything,

These transformations of character lead us to speak of the important facts to which we called attention, thirteen years ago, in the *Gazette*

Médicale. Long before the paralysis appears (we have noted facts extending back from six to seven years), perversions of the moral and affective faculties become manifest among certain individuals, which do not prevent them from fulfilling the duties of social life, and of acquitting themselves of their callings. The families, surprised and distressed, whisper among themselves of acts of indelicacy, improbity and debauchory, for which no antecedents had prepared them. They extenuated the wrongs, they paid the penalties, they stifled their complaints, until this long and secret martyrdom terminated by the breaking out of the disease.

"Obs. I.—A superior official of a great establishment had performed his duties with capacity and zeal almost up to the moment when he was placed under my care. Nevertheless, the details given me by his wife left no doubt that the perversion of his faculties was of long standing. Previously generous and of chaste habits, he had for more than six years manifested sordid avarice and unbridled licentiousness. His wife had ceased to demand from him money for household purposes, because when asked he would become so violent as to cause her to fear mischief. With the progress of his malady, his avarice prompted him to most humiliating acts. He would not pay money due, asserting that he had already paid it; and in the end he had stolen objects from the houses of his acquaintances. Even these last acts were looked upon as eccentricities, no one suspecting the disorder of his mind; and it was not until the life of his wife had been placed in peril by ill-usage, that it was resolved to place him in an asylum. There he remained more than five years; his motility at the time of entrance presenting but slight signs of disturbance, but the memory being manifestly enfeebled."

Since the insertion of this note in the *Gazette Médicale* my collection of similar facts has been augmented, and as this subject is not less interesting for the history of the disease as well as for legal medicine, I propose to report several examples taken from one hundred observations collected by myself, and of which the results were communicated to the Medico-Psychological Society.

"Obs. IV.—*Licentious acts and unfortunate speculations during a period of about six months—Intellectual symptoms announcing general paralysis, but no lesion of motility—Mandate of arrest—Rapid progress of the disease—Death three months afterwards.*

"A merchant, aged forty-six years, whose conduct had always been honorable, was brought to my establishment in 1846, on account of acts of licentiousness, of which he had been guilty over a period of half a year, and which were so entirely opposed to his usual habits that his family, painfully affected by his conduct, thought that it must be attributed to some mental derangement.

"For several months, moreover, he had given himself up to speculations, of which many had failed. Even at the time when attention had been aroused by his disordered actions, nothing in his discourse and manner of living had excited any suspicion of mental disturbance. He visited the Bourse daily, had numerous communications with persons of his calling, but none of them had perceived his mental state, or, at least, no one had pointed it out.

"When he was brought to me, he neither showed any emotion nor manifested any astonishment at being transferred to an unknown house. I spoke to him first upon the acts which had led to his being placed under control. He answered, speaking carelessly, and as if the matter did not concern him, 'That alarm had been too readily taken, and that everything would be explained.' I interrogated him afterwards about his business, and the position of his affairs. To these questions, which did not seem to surprise him, he to all appearance responded rationally but somewhat evasively, and gave no explanation. I referred more particularly to certain of the points on which I sought information, and he said, 'My business affairs, like other commercial matters, are both good and bad—I have not to complain of them. My family behaves well to me; my position is satisfactory, and my health is very good.' I attempted to question him more closely, but he then responded, 'I do not know; I cannot call to mind.' Not being able to elicit anything more from him, I terminated the conversation, and he wished me to allow him to visit the Bourse. This request not being acceded to, he left me, as if the refusal were a matter of trifling importance, and went into the garden.

"During this conversation it was evident to me that the attention was enfeebled, the memory confused, and consciousness modified, but I did not observe either embarrassment of speech, disorder in the movements, or manifest incoherence. I concluded, however, that the man was under the influence of general paralysis, and I stated to his relatives that grave consequences were to be apprehended, not only to his life, but also to his fortune.

"The examination of his books was a thunder-stroke. They were badly kept, showed great omissions, and the only certain information to be obtained from them was that ruin was imminent. The commercial position of the unfortunate man presently, however, assumed a more serious cast. The judges of the Tribunal of Commerce pronounced on his affairs a verdict of fraudulent bankruptcy, and directed his arrest; and an officer of the court presented himself at my establishment with the necessary mandate. I conducted him to the patient, in whom, in the space of three weeks, the following changes had taken place: His memory was entirely lost, and he could not respond to any questions put to him. His look was stupid and his figure immobile. Already embarrassment of the speech might be noted, and feebleness of the legs showed positively that he suffered from general paralysis, and that the habitual excitation of his life had been masked by mechanical movement. I declared to the officer that in the state in which the patient then was, I could not permit him to execute the mandate; and I added that from the rapidity with which the affection had proceeded, it was almost certain that a serious termination would very shortly occur. I prepared a certificate to this effect, and forwarded it to the President of the Tribunal of Commerce, and the arrest was adjourned until the re-establishment of the patient's health. Three months afterwards this patient died in the last degree of brutishness and marasmus."

Disorders of the intelligence, and perversions of the moral and affective faculties, may exist long before the appearance of lesions of motility, and even pass unperceived for months or years, because the patient speaks little and conceals his acts.

"OBS. V.—*Change of character during a period of two years—Irregular conduct extending solely over a few months—Recent extravagant acts—Bankruptcy—Judicial inquiry—Singular answers—Belief that the individual simulated insanity—Examinations to ascertain his mental state—Report proving the disordered state of the mental faculties without lesion of motility—Sudden occurrence of embarrassed speech and of myriads of transitory ideas—Paralytic dementia, and rapid progress of the affection—Death in three months.*

"M. Henri, a merchant, aged fifty years, and of good constitution, was brought to my asylum in 1852, for mental disorder, which was said to be of recent date. At the time of his entry the physiognomy announced health, but the gaze was without either fixity or attention. The walk was firm, the attitude erect, and the limbs manifested nothing abnormal. When he was questioned, it was impossible to obtain from him any connected reply: he heard without appearing to comprehend. Seeing an open door, he immediately endeavored to escape through it, but, on the door being closed, he did not make any observation or complaint, and he expressed no desire to return home.

"I thought that the patient was suffering from dementia, with general paralysis, but it was impossible to demonstrate the changes constituting the latter affection. The gravity of the case led me to doubt that the mental disturbance was so recent as the relatives believed. I questioned them, and ascertained that an alteration in the patient's character had been observed for two years. He had become incommunicative, answered abruptly the questions put to him, and would not give any explanation of this change of disposition. Very regular in his habits, and of exemplary life, he had begun, many months before, to absent himself from home without it being known where he went, and it was not until he had been carefully watched, that it was discovered he frequented places of evil resort. His taciturnity was attributed to the state of his business, which was bad. These changes, in fact, dated back to a time when his brother had become bankrupt, and when he himself had in consequence been obliged to close his accounts; but it was only when he had been guilty of sundry extravagances, that disease was recognized.

"The heavy losses occasioned by these two failures, and the absence of entries in the books, gave rise to most unfavorable surmises, which became still more serious on account of the patient's conduct. When he was requested to give the information required to unravel his affairs, he would respond in a jovial tone, 'Very likely: I want nothing, I do nothing now, and I do not wish to do anything; I will see to it presently. I do not require anything; all my affairs are in a prosperous state.' More commonly he said, 'I have done that which is customary in commerce: all will be explained, all justified.' These brief answers were made without any embarrassment of speech, hesitation, or stammering, but in a mocking manner, and it was thought that he simulated insanity.

"This opinion, which did not lack weight, induced me to examine the patient daily with great care. He did not speak to the other boarders, but often played at piquet. After a sojourn of many months, it was noticed that he counted badly, and that he became forgetful, the gait, the limbs, and the tongue, still maintaining their normal state. Sometimes it appeared to me that he hesitated in the articulation of certain words, but several months passed without my being able to satisfy myself upon this point. He walked every day many hours, with a firm step, then he would sit down in a corner of the hall, reading, or seeming to read, one book, the leaves of which he rarely turned. When interrogated about what he read, he would answer, 'I know what I read,' and would not add another word. Twice he had an involuntary evacuation.

"As the idea of simulation was still entertained, I was directed to make a report on the case. Founding an opinion upon the enfeeblement of memory, the errors of calculation at piquet, the abandonment of an amusement which had appeared to gratify the patient, the failure of attention, the indifference with which he received his family, his placid air, his singular smile, his promenade in a particular corner of the hall, his incessant reading, the two involuntary evacuations he had had, and the diminution of motility and cutaneous sensibility, I declared that he was attacked with dementia, that general paralysis, which I had expected on his entry into the asylum, and in the existence of which I still believed, was not yet manifested by any characteristic signs, but that it was impossible to believe in simulation. The *statu quo* was maintained eighteen months; my opinion was acted upon, but as the physicians who frequently examined the patient on the part of the authorities, could not distinguish any embarrassment of speech, trembling in the limbs, or incertitude of gait, and as he appeared to laugh at the questions put to him, confining his answers to the words we have already recorded, and turning his back upon the interrogators when the questioning was prolonged, the opinion of simulation, although shaken, still existed. Some admitted there had been derangement of the mental faculties, but all thought that he knew what he was about.

"On the 28th of March, 1853, when I made my usual visit, he came to me with a precipitous step, and somewhat uncertain gait, saying that he was very well. I was struck with a very marked embarrassment in his speech—he stuttered at every word. His aspect was stupid, he saluted me at different times after the fashion of a clown in a pantomime, and afterwards drawing me aside, requested me, in a low voice, to lend him from three to four millions. Then he returned to his corner and recommenced reading the book he never quitted, and which he most commonly held in the hand with the pages reversed. For five days the stammering was very marked. He spoke once more of the three to four millions, and then his taciturnity and ordinary immobility returned. From this time the disease made rapid progress. M. Henri became more feeble upon his legs, soiled himself, wasted, and in three months succumbed to marasmus."

The case that we shall next record has been observed from the first symptom of disorder even to the fatal termination. It has been possible, consequently, to demonstrate with exactness a primary derangement characterized by exaggerated fears regarding the health, with return to reason for three years. Then a second disorder, having the characters of general paralysis, first under the form of ambitious mania, and subsequently under that of paralytic dementia.

"OBS. VI.—*Exaltation of an hypochondriacal character—Cure, but with an exaggeration of the habitual disposition remaining—Appearance of general paralysis at the end of three years—Death.*

"M. T——, aged fifty-two years, and of good constitution, had always been irascible, hyperbolical, irritated by the slightest remarks, and could not bear the most trifling discomfort. This disposition is very generally that of his compatriots. For many years he was subject to an eczematous eruption situated on the inner surface of the thighs. He had been advised to use sulphurous lotions. The application cured the cutaneous disease, but he asserted that in consequence of this treatment an intercostal neuralgic affection arose which radiated to the neck and vertebral column. Four months of medication gave him no relief, and he entered a great establishment in Paris. The violence of his lamentations, his paroxysms of anger, and his continual menaces of death, induced the physician who had care of him to recommend him to go into a lunatic asylum. When he came to me he complained of the most intolerable pains. According to his own account, he was tortured, wasting away, lost, and it remained for him but to die. If he were touched, he shrieked as if he were being flayed. After the employment of prolonged baths for a few days he became somewhat better, but as soon as he felt the least return of his disorder, he uttered piercing cries, wept, groaned, rolled upon the ground, and wished to kill himself, but without ever making a real attempt. This patient was the torment of the house. He called for medical aid day and night, and when remonstrated with for his unreasonableness, he answered, 'What does your sleep matter? I am dying, and the physician is the property of the patient who is threatened by death.'

"Little by little this great excitement subsided, and at the end of three months the patient was sufficiently well to take excursions in Paris. During the last six weeks of his stay with me he went frequently to the theatres and into the country with members of my family, and there remained but a more manifest degree of that habit of exaggeration which is peculiar to certain portions of southern countries. M. T—— spoke of his fortune, his acts, his conduct, and his knowledge, with expressions so hyperbolical that we all said, 'He is menaced with general paralysis; he will have the mania of millions.' He proposed unceasingly operations which would, he asserted, bring him in great sums. A real amelioration had, however, taken place in his state; his neuralgic pains were bearable, he attended to his own interests, and he determined to return home in order to resume his business. When he quitted my care he did not manifest, and he never had manifested, any indication of embarrassment of speech, feebleness of the limbs, diminution of sensibility, or alteration of sight. M. T. was observed most narrowly from the intimate relations which had been established between us.

"A year and a half after his departure, he returned to Paris, and called upon me. Apart from his habitual exaggerations, which were a little more marked, he possessed his full intelligence, he executed his business, but in transacting it he displayed an obstinacy which debarred all counsel, and often prevented success. He expended much uselessly; he made purchases heedless of cost, and made expensive gifts. He was not submitted to any examination. For the rest, his conduct manifested nothing of moment, and there were no symptoms of the disorder we feared. One of my sons, some time after, passed a month with him, and he observed solely outburts of passion and paroxysms of extreme anger on the slightest occasions.

"Three years and a half after leaving my establishment, M. T. again came under my care, and for general paralysis. It would seem that the neuralgic pains which had attacked him some years before his first admission, and which had greatly diminished, without ceasing entirely, had now been lost altogether for about a year. This disappearance was followed presently by a total change in M. T.'s character. In place of the obstinacy and anger which habitually characterized him, he had become gentle, but entirely unable to conduct industrial operations. He wished to hear no more of them, and when his children besought him to let them act, and represented to him the losses resulting from his inaction, he replied, 'We shall recommence our operations next season. What does it matter that we lose now 50,000 francs, when we shall regain 500,000 in a year?' He saw everywhere prodigious profits, and believed himself to be the possessor of fabulous sums. Presently he committed eccentric acts; he visited the *cafés* dressed in the most singular manner, and set himself up as a good-fellow, speaking to every one. He squandered money as a useless thing. His memory failed, and hesitation and stammering were noticed. The children, who had been forewarned of the nature of the malady, then confided him anew to my charge.

"A few days after his arrival, MM. Calmeil and Parchappe saw the case in consultation, and diagnosticated a grave paralytic dementia in an advanced stage, and which would have a rapid course. During the first five or six months he passed with me, he went backwards and forwards, packing his trunks at intervals in order to return home, but abandoning this idea on the first remark. His cutaneous sensibility was very much blunted; he did not move when pinched; he grasped indifferently; but he preserved still his ideas of riches, saying from time to time that he should have a magnificent year, gaining hundreds of thousands of francs—nay, millions. But the activity he had retained was insensibly replaced by apathy; he wavered upon his legs, and fell occasionally. At this time he spoke no more of grandeur and riches but as far off; he passed his days upon a chair, sad, and with a melancholy aspect, saying that he was ill. One day, although the memory was nearly gone, he cried out that he was becoming mad. In the last months of his sojourn in the asylum, he never quitted the corner of the room in which he was placed. His eye was fixed, and without expression; he no longer recognized his relations, or else he confounded one with another, and he responded with difficulty to the questions put to him. The speech was much embarrassed, and there was very marked incoherence. He was led as an infant, and it was with difficulty that he held himself erect. The change which he had undergone was so great, that we thought when he returned to his own home he would succumb in a few months. He lived, however, nearly two years, after having undergone spasmodic contractions, rigidity of the limbs, and wounds and scars which healed and broke out again, and were again healed.

"This observation, of which the subject has never been lost sight of, is highly interesting from more than one point of view. First, we can follow step by step the long incubation of the general paralysis to which this unfortunate organization was, so to say, fatally predisposed. A primary derangement of mind, characterized by an exaggerated hypochondriacism, announced the approach of the evil. This fact confirms M. Baillarger's opinion upon hypochondriacal delirium considered as a precursory symptom of general paralysis. A stationary period occurs from the efforts of nature, but it is foreseen that sooner or later the paralysis of millions will be developed; the intellectual rudiments exist, those of motility alone fail. Three years pass in the midst of motiveless outbursts of passion and anger; the patient's affairs are conducted solely under pressure, and they are damaged every moment by false judgments, a capricious will, and acts which, without being stamped with madness, are often hurtful. Fortune may be compromised and often lost in consequence of the determinations arising from a brain placed in similar conditions; but it is necessary to look idly on and to contemplate the event without the power of preventing it, as the law does not permit, in this case, any measure of conservation so long as the individual speaks reasonably. Lastly, the moment comes when the evil is matured and breaks forth. Here we note a phenomenon which has often been observed in cases of a like character—to wit, the neuralgia, which had endured several years, ceases entirely. Almost at the same moment a radical change takes place in the patient's character, and his disposition becomes different in every respect to that which it had previously been. Although most commonly insanity exaggerates the qualities and defects of an individual, there are cases which prove that occasionally it substitutes a new character for the old one. This phenomenon was followed by the symptoms of paralytic mania in its ambitious form; and this, after existing many months, was succeeded by paralytic dementia, mixed temporarily with a little melancholy depression, in which the patient succumbed after a struggle of more than two years."

The cases we have recorded do not leave any doubt npon the changes which the character, the disposition, and the habits may undergo from paralytic insanity. In the analysis of our one hundred cases of general paralysis, it is found, when the *third category* is studied, comprehending *disorders of the understanding preceding those of motility*, and numbering forty-two observations, that one of the first and most constant appreciable disorders of the intellect is a change of character which ordinarily consists in a greater degree of irritability, impatient movements, anger, and violence. This was observed in three-fourths of the cases.

In a much more restricted number of individuals the disease was, on the contrary, preceded by a calm, placid, indolent and apathetic state. These individuals reasoned well, and admitted that they ought to work, to act, to attend to business, but between speech and action there was an abyss which they could not leap over. One of the earliest examples that we have noted of this change, was that of the chief gardener of a wealthy mansion. For many years he had done his duties, which were solely of a routine character, well. His activity was great, and sufficed for everything. Gradually he became silent and relaxed his superintendence; he complained of confusion in the head; he still reasoned well, but he confessed that rest would be useful to him. He was placed under my care for two months. In the first he improved; in the second he conversed with great lucidity on his horticultural labors. It was interesting to listen to him, and he appeared to be very wishful to return to his occupation; he indicated, moreover, certain improvements to be effected. We thought that he was completely restored, and he was discharged and immediately returned to his duties. Some time after we had news of him. On his return to the country, it would seem that he discussed what he had to do, but he was unable to execute anything, or to give any orders; he was always undecided; and it became necessary to dismiss him.

Another example was that of an architect, also confided to our care. M. had a young wife who was very much attached to him. Two years after marriage she perceived that her husband became incommunicative, and that he occupied himself no more with his projects; he promised to look after them, and recommence work, and to go about, but kept to the house. To the representations of his wife he responded that he desired nothing more than to work, but he continued to do nothing, and this state persisted a year. It was observed that he became more irritable and capricious, and that at times he was forgetful. At times, also, he stammered. About this period he was brought to me. He was then in the second stage of general paralysis, the symptoms of which had been clearly apparent for a period of from five to six months. He became more gentle, but he always remained apathetic. After a sojourn of six months, his family finding him better, removed him home. The stationary condition persisted more than a year, then the disease made rapid progress, and the patient succumbed at the end of two years.

In place of choleric irritability or of a seemingly rational apathy, or with one or the other of these states, graver symptoms may be manifested, such as perversions of the moral and affective faculties. Families are distressed with these changes and do not foresee that they arise from a malady which is very often fatal. In fact, the individuals affected with it continue to perform the duties of social life. Acts of indelicacy, of dishonesty, of debauchery, etc., are noted from time to time, and every effort is made to conceal or make reparation for them; and sometimes the scandal is so great that the law steps in and punishes the unrecognized lunatic.

It is in this precursory period of general paralysis, which may persist during many years, that men who until then were religious, of chaste manners, and honest, are seen to present contrasts the most opposite. Of these abnormal contrarieties, that which has excited the most attention is the mania of robbery, which may be attributed to a disposition of mind very common among general paralytics, and in consequence of which they believe themselves rich, powerful, and masters of all they see. We have cited several examples; let us recall them briefly:

The Baron de V——, a superior officer in an important administration, where he fulfilled well his functions, exhibited, six years before his entry into my establishment, signs of a notable alteration of his habits of life. Habitually generous, and living in excellent relations with his wife, he manifested sordid avarice, unbridled licentiousness, and ended by pilfering from his friends.

The individual who pilfered at sales, and whose conduct made a great noise at the time, was arrested, and committed to prison. When examined, his defense, which consisted in saying that he had but used a right of his profession, his placidity and carelessness, the slight impression made upon him by the judicial proceedings and the consequences of his acts, and his antecedents, until then irreproachable, led the magistrates to conclude that in his case there was mental derangement. He was compelled to resign his post, and he was confided to the care of his family; but nearly seven years passed before insanity was actually recognized.

The railway clerk who had been guilty of very considerable misuse of funds, when questioned on the subject, no suspicion having been previously entertained that his mind was diseased, said: "I have only taken what belonged to me; this money was mine; I have gained it by my work and the improvements I have introduced into the establishment." The reasons by which this opinion was supported, left no doubt on the already advanced derangement of his mind.

The ambitious mania is not the least curious of the phases of general paralysis. It is all the more useful to note this phase, since when present it often happens that the faculties appear to be in their natural state, no one suspecting the perturbation which exists. In the beginning, the exaggeration of self that I have particularly directed attention to, the ambitious mania, does not present itself with those well-defined and grotesque characters, which it possesses subsequently. General paralytics in embryo, exhibit an exuberance of contentment and power; they speak, some of places, of dignities, and of honorable distinctions; others of speculations, of transactions, and of purchases to be effected which offer great chances of fortune. These converse of ameliorations, consummations, and discoveries, those of comedies, romances, and books to be published, the merit of which will secure their recompense. These discourses are looked upon as simple manifestations of the desires which never cease to agitate man—no singular phrases, no unaccustomed actions rousing the attention to a more serious consideration of the matter. Or if it should so happen that the personages in question become more lively, more gay, or more enterprising than usual, and deviate somewhat from their ordinary course of life, they are said to be *eccentric*, and there is an end of the matter.

An attempt has been made to circumscribe singularly this insanity of riches, this mania of grandeur, this pride of self, which Bayle had asserted to be one of the characteristic signs of paralysis of the insane, and which reveals too clearly, in its pathological expression, one of the moral wounds of the age. We have sought information upon the exactitude of Bayle's statement, and have already expressed ourselves in these terms. "On investigating the frequency of ambitious delirium in the forty-two observations contained in the work of M. Calmeil, we have noted twenty-five which offer this type; in the eighty-five observations of Bayle, fifty-two present the symptom of mania of riches or of honors. It may have existed in other cases, because the patients were admitted only when in the third degree of the disease or upon the point of expiring. Let us observe that this delirium ought to be studied during the whole progress of the disease; because some paralytics who at the commencement of the malady have no ideas of grandeur, manifest them subsequently; and so reciprocally Sometimes these ideas are fugacious, and show themselves as a species of lightning, so to speak. M. Baillarger has made the same remark. In his lectures of 1844 he says: 'It is necessary to watch the individuals during the whole course of the malady; because some persons who at the beginning of the disease have no grandiose ideas, manifest them at a later date, and *vice versa*.'" At the sitting of the Academy of Sciences on the 17th September, he stated that he regarded this symptom as one of the principal ones of general paralysis.

"The coincidence of mania of grandeur and of general paralysis," states M. de Crozant, in his report of the patients admitted under the care of M. Voisin in the year 1841, "is a truth which I cannot understand how it has been contested. I certify that there will not be found in Bicêtre a single paralytic (I have at this moment before me the observations made upon these patients), who is not suffering from ambitious mania, provided always that the individual be fittingly examined, and that such replies as that he is neither rich nor powerful be not received as decisive.

"I conducted one day over Bicêtre a physician who applied himself to the study of mental alienation, and who held a contrary opinion, and I desired him to point out to me a solitary paralytic who did not manifest this form of mania. After much research he brought to me a patient, and, with an air of triumph, he asked him before me if he were rich, and a prince; if he were worthy of becoming one, and if he did not hope to become one. The patient responded very properly that he was a tailor, that he barely earned what sufficed for himself and family, and that he had no other desire than that of doing well his duty in his station of life. His entire conversation was very rational, and so far as it went this patient appeared to be an exception. I did not, however, delay to prove to my *confrère* that all this passed for nothing. In fact, when the patient was questioned upon his station in life, and of the manner in which he fulfilled it, we quickly learned thet we had to do with the most able, the most distinguished, the most eminent tailor that ever existed—a tailor the most childish and the most superb that could possibly be interrogated. My adversary avowed that he was wrong in this instance. Paralytics carry this self-sufficiency, this presumption, into all that relates to them; their beauty, their health, their muscular force, and their talents are successively vaunted and trumpeted forth among themselves in the most pompous style—a style laden with images and epithets."

To revert now to our peculiar consideration, the opinion of our *confrère* and friend Bayle. We have analyzed one hundred observations which we have collected for the purpose of throwing light upon many controverted points of general paralysis. This is the result of our researches on the point in question :

EXPANSIVE FORM—*First Variety*—Mania of riches and of grandeur, predominance and persistence of these ideas, .	20
Second Variety—Exaggeration of self-contentment and satisfaction with everything, ideas of riches and grandeur occurring from time to time, ...	22
Third Variety—Mania of grandeur, or of riches at long intervals, often even as flashes merely, ...	10
Fourth Variety—Double form expansive and oppressive, with ideas of riches and grandeur, ...	12
	64

The symptom noted by Bayle and generalized by Crozant (without corroborating the opinion of the latter of these practitioners), is not then a frequent phenomenon, since it is noted sixty-four times in our one hundred observations; and it may be conceived that, under the influence of this idea, paralytics would carry off things which did not belong to them.

These thoughts of riches, of power, of talent, of capacity for everything, have often the most deplorable consequences for general paralytics. This morbid state, and the intellectual debility which is the consequence of it, leaves these unfortunates at the mercy of designing men, who lead their dupes into disastrous transactions, to the great injury of the victims and their families.

Several years ago, I was consulted about a rich man in whom I quickly recognized the intellectual dispositions spoken of, although he dissimulated very well his infirmity. He was one of those patients who impose upon those around them by their apparent rationality, their specious arguments, and the observation of the habitual proprieties of life. The substratum of vanity which I readily discovered, in spite of his rational address, induced me to intimate the peril he was in to his family. I could not advise them to place the patient in an asylum, indeed they would not have followed such advice, he as yet speaking so well; but, in presence of his physician, a well-informed man, I advised the family to keep upon their guard relative to his fortune. "Take precautions," I said "against sharpers; they would easily victimize him. The danger is great on his side, and I warn you of it, because I have seen more than one example of this kind." A year passed before I heard anything more of this gentleman. Then, one day, he was brought to me, after a scene of violence which had placed one of his relatives in danger. My prediction was verified; it was necessary to make good a deficiency of 200,000 francs.

The merchant whose case is related in the sixth observation had also in the same manner squandered 600,000 francs, and reduced his wife and children to poverty. At the termination of the sitting of the Academy of Sciences, where I had communicated this paper, one of my friends said to me, "If these facts had been known, my son-in-law would not have lost 800,000 francs, ruined my daughter, and left five children to my charge!"

It is impossible for the thoughtful physician not to remark that the mania for gold which has descended among the lowest classes of society whilst previously it was restrained to patricians and freed-men, to the higher classes and their attendants, has become incarnated in a special madness which gives to our asylums one-fifth, one-fourth, sometimes even one-third of their inhabitants. The number of those struck by it is to be counted by thousands, and is constantly increasing. It has been pretended, as in other facts of a similar character, that this augmentation depends upon a better knowledge of the malady. We shall make but one observation upon this objection, namely, that thirty years ago there were in our private asylums more demented patients and fewer deaths, while now dementia has yielded the precedence to general paralysis, and at the same time the mortality has increased. For the rest, among the authors who have quoted facts in support of the predominance of this malady, we ought not to forget M. Moreau de Tours. Comparing the reports of Bicêtre, Charenton, and the private establishment of Esquirol, the *résumé* of those three asylums may be summed up thus:

First asylum, considerable increase of the number of general paralytics for the inferior classes; *second asylum*, less sensible increase for the middle classes; *third and last asylum*, stationary condition for the superior classes. Strange contrast! this gold, after which the most of these unfortunates have run without obtaining it, they now possess at the end in a dream! They have an abundance of it; they dispose of millions upon millions, their treasury is inexhaustible; under their happy hands everything is changed into gold and precious stones. They are princes, kings, emperors, gods! I remember a poor grocer whose business transactions were bounded to the sale of sugar, pepper, and cinnamon; he believed that he associated with all the intelligences of the age. Laced with a species of Swiss banderolle, he styled himself governor-general of the universe; distributed on all hands orders upon the Bank of France; and directed that several hundreds of millions of his works should be printed. The Emperor of China, he asserted, had read his books, and commanded that a translation should be made of them!

As if it were in bitter mockery of their lot, these Crœsuses, these princes, these geniuses, these all-powerful men, are stricken with debility so great, that even when in the prime of life, a child can push them over. Their speech is interrupted momentarily by a stutter which prevents them completing a sentence; their feeble hands tremble as they take hold of an object; their legs can barely sustain them, and in the end fail altogether; and the last stage of their malady is a brutishness unknown among animals.

The forerunners of general paralysis do not develop alone the disposition to pilfer, they also produce changes of conduct which cause the greatest astonishment among those who witness them. To the examples already related, we may add the following: A magistrate of irreproachable manners up to the age of fifty-two years, presented at this epoch a change in his character and habits which surprised his wife and friends. From being cheerful, affectionate, and reserved, he became moody, churlish, and communicative. It was noticed that he drank, and that his reason was at times deranged. Attention was also aroused by the fact that he frequently left the house, and sought to hide whither he was going. He was watched, and it was discovered, in spite of his precautions, that he frequented houses of ill-fame. Conduct so opposed to his principles and entire life, excited the supposition that his mind was disordered, a notion which, until then, had not occurred to any one. A specialist physician was invited to dinner, the family fearing to wound the feelings of the patient by a direct visit. The play of the physiognomy was still preserved, but during the repast the physician noted occasional forgetfulness, signs of inattention, certain ambitious conceptions, a slight hesitation, and inequality of the pupils. His opinion was soon formed, and from some movements of impatience which escaped the patient, he cautioned the friends to be on their guard, as it was presumable that paralysis was in progress. A few days afterwards, great excitement rendered it necessary that the patient should be placed in an asylum.

It is evident, then, that insanity, and particularly general paralysis, can change the character of individuals, and give rise to eccentric, bad, and reprehensible acts, in opposition to their known habits. But at this point a difficulty occurs: how shall we distinguish whether these acts arise from perversity of the passions, or from disease? It has been unhappily shown by experience, that men who have acquired a reputation without stain, may, under the influence of violent emotion, give the lie to their antecedents, and commit an evil action (it is requisite to mention this, although we shall not dwell upon the subject); but it very often happens that these sudden and unforeseen lapses are the result of a mental disease. Now, in cases of this kind there are frequently precursory symptoms, *avant-couriers*, as a celebrated English alienist physician, Dr. Forbes Winslow, has well said, in his remarkable work *On Obscure Diseases of the Brain and Disorders of the Mind.* It is these precursory symptoms which it is necessary to seek for and place in evidence. In very many cases an examination readily lays bare the mischief, and the practiced physician promptly demonstrates facts which the affection of the family had misunderstood, palliated, and sought to explain. Nothing is more common, indeed, in such circumstances, than to hear relatives exclaim, "We had not noticed these things; we did not attach any importance to them; or we looked upon these actions as eccentricities, the consequence of trouble. The idea of insanity never entered our thoughts." Others will say, "Now that we think of the matter, these particulars to which you have called our attention have existed a long time." Some will add, "We mourn over his conduct, we could not comprehend it, we attributed it to the time of life, to sickness," etc.

But there are cases which take us unawares, and for which we are in nowise prepared. Under these circumstances it is requisite that the physician should be doubly careful in his researches. The index which ought to guide him in the first place is the idea of disease. In the majority of these cases, in fact, where these transformations of character, disposition, and conduct are noted, it is right to suspect general paralysis; if the age be from thirty-five to forty-five years, if there be sensual and intellectual excesses, and hereditary transmission is probable, the presumption acqires more force. But there are much more certain marks, those, to wit, furnished by disorders of the three most important functions—intelligence, motility, and sensibility. General paralysis may manifest itself by lesion of motion; it may show itself first by changes both of the intelligence and the motility combined; or it may be heralded by derangement of the understanding alone.

Before examining the characteristic symptoms of these diverse lesions, it is necessary not to lose sight of an initial phenomenon, which, although it does not possess the character of universality which Bayle attributed to it, is frequently observed, and merits consideration; I allude to congestion. In our one hundered observations it has been noted sixty times. This causalty may consist in simple giddiness, or in vertigo; it may even pass unnoticed, but most commonly it is recognized, and it is followed by grave results of a special nature. The congestion determines an enfeeblement of the intellectual powers and occasions forgetfulness, loss of memory, and indecisions. The attention, the comparison, and the judgment lose their clearness, their precision, and their ordinary stability. If the individual be required to give a *résumé* of a transaction or to express in writing his opinion upon a disputed subject which demands thought, marked differences will be observed between the work in hand and the ordinary efforts of the person of a similar character; sometimes the writing itself will be altered. When the disease has made progress, omissions will be observed, as well as the forgetfulness of words or letters. Kindliness is often more marked than usual, and the patient enters into conversation with a confidence which at a later date will become ambitious mania. At other times, on the contrary, but more rarely, a state of sadness is observed, a tendency to melancholy or hypochondriacism. However little tact the examiner may possess, the patient expresses no astonishment that a stranger should mix himself up in his affairs.

The disorders of the muscular system are the touchstone of the disease, and often even they suffice alone to reveal the existence of general paralysis. One symptom especially may be considered as the starting-point of the series of degenerations that the patient passes through. This symptom, characteristic to the specialist physician, and which escaped but a little while back the attention of able observers, manifests itself by a passing trembling of the lip, and a slight and hardly perceptible embarrassment of the tongue, a hesitation upon one letter or word, which recurs only at long intervals. No doubt this symptom alone would not be sufficient for the diagnosis of general paralysis, but it weighs heavily in the balance; it appeals strongly to the attention, and when it is joined with other well-known symptoms, there can be no doubt. This muscular enfeeblement, in truth, extends itself over the whole system: the figure has no longer any expression, because the muscles which respond to the workings of the mind contract with difficulty, or not at all; the gait loses its ordinaray erectness, and the movements lose their precision, and the pupils become unequal. A certain number of these patients recognize that they are no longer apt for the sexual functions; others on the contrary, abandon themselves to excesses of every kind. In order to ascertain if the diminution of motility be widely distributed, require the patient to grasp the hand, and it will be felt that in many the pressure is not in relation with their apparent strength.

The sensibility may present an appreciable change. M. de Crozant has remarked this fact as existing at the beginning of general paralysis. It has been doubted, but we have confirmed it in a case of commencing paralysis seen in consultation with MM. Ferrus, Baillarger, Brochin, and Carrière. Anæsthesia has been met with many times in insanity on careful examination. It is common in the second and third stage of the disease. For a long time we have experimented on our paralytics, and in nearly every case we have noted diminution of cutaneous sensibility; in some instances, indeed, there was complete loss. It is necessary also to ascertain the composition of the urine, and, by the aid of electricity, the contractility of the muscular system. Finally, in several cases we have seen amaurosis, transitory deafness, and paralysis of the sixth pair of nerves, precede several years the development of general paralysis, of which a diagnosis had been made from this epoch.

In summing up the cases recorded in this article, and the remarks to which they have led, we think that we are justified in coucluding:

1. That when individuals, at a period of life already advanced, exhibit a change of character and conduct, and commit actions which are in complete disaccord with their principles and antecedents, we ought to surmise a perversion of their intellectual faculties.

2. This surmise becomes a certainty when there is discovered among the majority of them several of the characteristic symptoms which we have enumerated.

3. The doubt which might arise in a less-marked stage of the malady, is dissipated by prolonged observation, since ninety-five per cent. of the

cases of general paralysis tend to a continual progression, and the disorder terminates by death in about the same proportion of instances.

4. Lastly, the symptoms described possess a substantial importance, because they place us upon the traces of general paralysis before the disease is yet fully declared.—*Med. Critic and Psycho. Jour.*

INJURY TO THE EYEBALL.—A man aged forty-five was admitted into the Royal Westminster Ophthalmic Hospital, under the care of Mr. Jabez Hogg, Nov. 2d. On the morning of admission he received a violent blow over the left eye from a heavy harness strap and buckle. Upon examination it was found that the anterior chamber was nearly filled with blood, the pupil dilated to the fullest extent, and motionless. Could not distinguish daylight; was suffering much from the pain and photophobia. Mr. Hogg decided upon division of the ciliary muscle, and at the same time to cautiously open into the antertor chamber, to evacuate the blood, and thus relieve the pressure upon the iris. The operation answered the purpose admirably; in a few hours all the pain had subsided. The next day all the blood had disappeared, and on the second day he was discharged, his sight having been completely restored, no distortion whatever of the pupil remaining.—*Lancet*, Feb. 2, 1861.

PART IV.—BI-MONTHLY ABSTRACT.

SURGERY.

Treatment of Fractures of Long Bones bg Simple Extension. By JNO. SWINBURNE, M.D. (American Medical Times, March 2, 1861.

AT the annual meeting of the Medical Society of the State of New York, for the year 1859, I gave my experience in the treatment of fractures of the femur by simple extension, and related the histories of twenty-five cases, which, in my hands, had resulted better, with more rapid recoveries, and more comfort to the patient, than I had been able to attain by any other means. I now propose to show that the same method can be applied to the treatment of fractures of all the long bones with equal success; and also that splints *per se* are useless, and in many instances worse than useless, if not absolutely injurious, except they are used as a medium by which the muscles are kept on the stretch.

I will endeavor to show from actual experience, first, that the practical surgeon requires no appliances for the treatment of fractures of any of the long bones, except such as are extemporaneously made; second, that the same can be said of the treatment of fractures occurring in, or in close proximity to any joint, such as intra-capsular fracture of the neck of the femur, Colles's fracture of the radius, those involving the elbow-joint, the surgical neck of the humerus, compound dislocation and fracture of the ankle-joint, compound fracture of the tibia and fibula, etc.; thirdly, that the same is true of diseased hip-joint, morbus coxarius, also incipient knee-joint disease. These several points I shall discuss separately, as well as the principles involved in the procedure.

I would ask of what service is a splint or splints? What office do they perform in the treatment of fractures? Authors say, they support the bone while union is being effected. I would ask, how many fractures of the long bones can be placed in apposition without the *use of extension*, particularly in oblique fractures, or where there has been great injury to soft parts, and overlapping of the bones? I know of few exceptions. The true use of splints *should* be to keep the fractured ends of the bone in apposition, by placing the muscles on the stretch, and thereby making them (the muscles) the true splints. The experiments of Reid and others show, that muscles are not susceptible of being stretched beyond their normal capacity; that when so stretched, they are capable of bearing great lateral pressure without much deflection; and any attempt at undue lateral pressure results in rupture of the muscular substance.

The supporting power of the muscles may be pretty well illustrated by the following experiment: Take a strip of wood and encircle it lengthwise with a number of cords of catgut or other strong fibre. Fasten these cords to two pieces of board, and then, by drawing these boards strongly apart, render the cords tense. The cords represent muscles; the strip of wood, bone; and the tightening of the cords, extension and counter-extension. While the investing cords are in this tense condition, endeavor to bend the strip of wood, when it will be found that the deflection is very slight, and that fracture of the stick is impossible. Replace this strip of wood with one broken through the centre, endeavor to bend it while the cords are tense, and the deflection in this case will also be very slight. To carry out the analogy still further, let the cords be attached to the ends of the strip of wood, as the muscles are virtually at the ends of a bone. Now if the fractured ends happen to be square (representing a transverse fracture of bone), they will be in apposition while the cords are made tense, but when the tension is relaxed the stick is no longer straight, and it bends to one side or the other as the case may be. Now represent an oblique fracture of bone, by cutting the fractured ends of the stick to any angle, oblique or acute; while the cords are stretched by extension the ends lie in juxtaposition, but when the extension is relaxed, the ends slide past each other, and lie at rest, side by side, in the only position possible for them. Suppose this broken stick, instead of being enveloped by simple threads, was covered with muscles put upon the stretch, and bound laterally by strong investing fascial and cellular tissue, the interstices of which are filled up with fat and invested by the skin, so as to combine the separate parts in one whole, you would have then, I apprehend, splints more permanent, unyielding, and enduring than any artificial appliances. How is it, for instance, where nature is left to herself, without any mechanical appliances? The bone unites, and that too without any bandages or lateral pressure, though with more or less deformity. But it unites notwithstanding the motion which takes place almost hourly.

All that nature requires for perfect union of bone is *rest* and a moderate degree of excited action, while all pressure by splints, bandages, etc., only impedes the process of reparation; and this pressure, in my humble opinion, is a prolific cause of non-union, as I will endeavor to demonstrate hereafter. While nature requires rest for the bony union, she requires also *perfect apposition* for union without deformity. How is apposition to be effected? We start with the knowledge that a muscle cannot be extended beyond its normal capacity, and that any attempt to go beyond this not only provokes resistance, but a tearing of the muscle. Take, for instance, a fractured thigh; extension on the extremity, by a strong man, will stretch the muscles to their normal length only, which fact can be shown by the most careful measurement, thus proving that the danger of *too much* extension is only imaginary. With the muscles drawn out to their natural state, what becomes of the bone? Where can it go, if not to its normal position, with the fractured ends in contact?

Let any one take the cadaver, dissect out cleanly and carefully all the muscles of any long bone, leaving all their attachments entire, and after fracturing the bone at any part make extension. He will find that the fractured ends assume their normal position. Would they not equally do so in the living subject, where muscles are invested with skin, fat, fasciæ, cellular tissue, and vessels?

Again, assuming the position that the extended muscles act as permanent adjusters of broken bones, and are in reality the only means by which the fracture is maintained in apposition, I ask of what use are all the mechanical appliances and apparatus, called surgical *splints*, if not to effect the above-named results? The splint beyond this possesses no practical worth; on the contrary, it is apt, by its too careful adjustment, to impede the reparative process, by interfering with the proper circulation of the part. It is for *this* reason that some surgeons make it a point to apply emollient dressings until the inflammation and the swelling subside. Even this delay is far preferable to the immediate application of carefully adjusted splints, bandages, etc., particularly where there is much contusion of the soft tissue, either from the bone within, or externally from the forces by which it was broken. Take, for example, two limbs equally contused, the sharp edges of the broken bone goring the muscles and nerves, the cellular tissue filled to repletion with blood, and the slightest movement causing the most excruciating pain. Subject one of these to simple extension, without any incumbrance to the broken member, such as splints or bandages, apply simple warm water dressings, and in a few minutes the patient is easy and comfortable, and remains so as long as the extension is kept up. Let the other limb be adjusted by the most careful and approved surgical appliances (unless these are such as keep up the extension without bandages or compression), and there will be a marked difference between the two in the degree of comfort experienced.

Then we may say that in extension the muscles and other investments of the bone are the true splints, and that there is but little exception to this principle being universally applicable. Surgeons situated in remote parts of the country have to act and not originate. They see comparatively few cases of surgery, and are the possessors of fewer instruments and surgical appliances. They may be called a number of miles to see a patient, and find, when they arrive at the house, that the appliances which they are in possession of do not answer the purpose. What are they to do? Send for some one at any distance, thereby wasting much time and entailing much unnecessary suffering? If we can treat any fracture occurring in the leg or thigh, from the hip to the foot, simply by a perineal belt and extension from the foot, without any splints, and make better results, with more comfort to the patient, and with more speedy recovery of the use of the limb, we have surely arrived at the grand desideratum; and when the treatment of fracture of the arm or forearm is rendered equally as simple, we have, I apprehend, arrived at the *ultima Thule.* As for myself, I employ this treatment indiscriminately, and I only ask my professional brethren, who have the opportunity to *try* it, to do the same, and I am sure they will be able and willing cheerfully to bear witness to its entire efficiency, as have my friends Drs. Thorn, of Troy; McLean, of the Marshall Infirmary; Whitbeck, of West Troy; and Willard of this city. I am positive that the method will withstand the most searching tests, and that it challenges comparison with the results of the most complex machinery of splints and bandages.

I have now treated over forty fractures of the femur and tibia, and in no instance have I seen over half an inch shortening (and that was the result of inattention), while in the larger majority there was no shortening at all (this of course, does not include inter-capsular fractures, where there is always more or less deformity), nor were there any of these that resulted in a non-union.

In fractures of the tibia I have seen no patients suffering from non-union, where extension was applied. But I have had three that failed to unite for three or five months, and they united only by bandaging and splints, and allowing the patient to go about and use his limb moderately, thereby creating some excited action. Of the humerus, radius, and ulna, I have seen no cases of non-union occurring in this city.

In my opinion, one of the prolific sources of non-union is the action of the muscles (spasmodic or otherwise), in causing the overlapping of the ends of the bone. I do not agree with the suggestion lately advanced, that non-union of the humerus might be due to a separation of its broken fragments. Is it true that the bone separates after hanging some time? I answer no! Instead of separating, it overlaps, and extension is absolutely requisite in order that it may be placed in apposition. The biceps and triceps are too powerful to relax in that way, particularly when under the influence of excited and inflammatory action. Overlapping of the bone has been suggested as a cause of non-union, Let us see a little what takes place when a bone is broken. 1st. You have the muscles gored and irritated; and the result is contraction of the muscles to their fullest extent. 2d. More or less overlapping of the bone. 3d. Infiltration of blood in the tissues. 4th. Muscles inflamed and hardened. This is the first stage. Now if this condition is left alone, ossific matter is thrown out, and union takes place, but with a shortened bone. If, on the other hand, you bandage and splint this limb, the parts are compressed; absorption goes on, and with it the ossific deposit is either prevented from forming, or is slowly taken up; the muscles are agglutinated to the surrounding tissues; and union is thereby needlessly impeded or wholly prevented, making the process of restoration exceedingly tedious. This also constitutes another one of the causes of non-union in healthy subjects. In my experience extension without splints has never resulted in non-union, notwithstanding over one hundred cases of fractures of the various long bones has been treated by that method, while out of only twenty or thirty cases treated by splints I have seen temporary non-union result in three instances.

In fractures of the inferior extremities, the patient, of necessity, is obliged to keep his bed, and hence there is less demand for comely appliances than in cases of fracture of the arm or forearm. In fracture of the femur I use simply extension and counter-extension without splints, and in the leg I sometimes do the same. At other times I effect extension and counter-extension through the medium of a delicate splint, and an equally delicate foot piece fastened to the foot by means of strips of adhesive plaster, while the counter-extension is made from the knee by adhesive plaster looped about the limb below the joint. Then, by means of a strong cord passed through this loop, and thence through a hole in the side splint some distance above the knee, the requisite extension can easily be made to any desired degree. If, after full extension is effected, it should appear that the limb is not sufficiently steady at the seat of the fracture, the application of strips of plaster around the limb and splint at intervals of three or four inches, will accomplish all the indications. If the fracture of the leg happens to be near the knee-joint, I am in the habit of using the perineal belt, made large, full, and easy, as in fracture of the thigh.

In compound fractures of the tibia and fibula, extension is especially applicable, and I may say indispensable. And here, to forestall any objections to this method, arising from the fact of a constant tendency on the part of the superior fragment of the tibia to anterior displacement, in consequence of the powerful contractions of the gastrocnemius and soleus muscles, I remind you of four artifices, either of which, according to the preference of the surgeon, or the particular exigencies of the case, will be certainly effectual in conjunction with extension and counter-extension, in preventing this deformity. 1. The use of the double inclined plane, with a view of subduing the contractions of the strong posterior muscles. 2. The judicious application of adhesive strips around the extending splint and limb, after inflammation has subsided. 3. The insertion of stout silver wire through small holes drilled into the fragments, and bringing these into apposition by twisting. 4. Malgaigne's steel point apparatus.

In simple or compound fracture of the ankle-joint, with dislocation, there is, from the same causes, more or less disposition to displacement, and consequent shortening. Here we are obliged to pursue a different course of treatment. The injury to the bone and soft parts is, in such cases, in so close proximity to the dressing used for extension, that for some few days we can do but little good by any attempt to extend the parts to any considerable degree, while, on the contrary, much mischief may ensue from inflammation, etc. The same condition applies to the use of bandaging and splints.

Taking into account all these conditions, I am in the habit of using the same kind of apparatus as above described for compound fracture of the tibia and fibula, and also flexing the leg on the thigh by means of pillows placed in the popliteal region, thus creating a sort of double inclined plane, and effectually relaxing the gastrocnemius and soleus muscles, which is an essential element in this form of displacement.

The fractures of the superior extremities are subject to the same laws, and hence require the application of the same principles. But, owing to the fact that the patient is not confined to the bed, the extension and counter-extension are necessarily made through the medium of a splint, while, in the lower extremities, the *bed* is the splint, the foot of the bedstead the point of extension, and the headpiece the counter-extending point.

In fracture of the humerus through any portion of the shaft, simple extension can be made by having a splint extending three inches below the elbow and the same distance above the shoulder. The elbow is secured to the lower part of the strip of board by means of adhesive plaster passed through a fenestrum, while to its upper extremity it has fastened the extremities of an axillary belt. We are thus enabled to obtain full extension and counter-extension with comparative ease and comfort to the patient, the muscles making the only true splints. The arm is kept in a sling, and if the surgeon feels any uneasiness as to the disposition of the bone, he can place a strip of adhesive plaster loosely at short intervals about the arm and splint, so as to prevent any kind of lateral motion in the parts.

In the treatment of fractures through the shaft of the radius, or radius and ulna, I use a simple splint situated on the posterior part of the forearm, fastened at the bend of the flexed arm by adhesive plaster, and the other end to the wrist by the same method, so that you get extension of the muscles to their normal condition, and also by this means approximate the ends of the bones. But inasmuch as the line of extension is not direct, and the bone is disposed to bow forwards, a few strips of adhesive plaster applied loosely around the arm and splint, at intervals of two or three inches, will keep the line of the bones correct.

Colles's fracture, which consists in fracture of the radius near the carpus, and dislocation of the ulna, presents one of the most trouble-ome forms of fracture that the surgeon is called upon to treat. This ast appliance has in my hands been very successful in the treatment f this accident, though I am obliged to use a compress in the concavity f the wrist in order to give the ulna sufficient posterior prominence.

I see by a reference to the journals, that a splint devised by Dr. eo. F. Shrady, of New York, is applied with great success in the treatment of this form of fracture, thereby obviating the so-called "silver-fork" deformity. Although the principle of extension and counter-extension by Dr. Shrady's plan is similar to that which I recommend, and the peculiar flexed and adducted position in which he places the hand is sufficient to maintain the fractured ends in apposition, I would, however, say, in relation to the splint, that in the first place it is not always at hand; 2d, its results *can* be no better than those obtained by the simple method of treatment by a shingle, piece of cigar-box, or any other piece of thin board by which to keep up the extension and counter-extension. I have now treated seven cases with the best possible results by my method, and they will bear comparison with those treated by any other. In fact, they are as perfect as they were before the accident. The fractures managed thus are nearly painless; and none of them have required redressing during three weeks of treatment, except an occasional addition of a new adhesive strip to perpetuate the extension. There is so little incumbrance about the limb that it can be examined without disturbing the dressings, while there is no swelling from tight bandaging, and the application of warm or cold water does not disarrange the dressings.

The most important forms of fractures are those situated near, and involving the elbow-joint, either of the bones of the forearm or arm. In this position, extension by direct means would be inadmissible for several reasons; the least important one being the awkward position of the arm for comfort to the patient. The plan I propose is simple, the apparatus easy of manufacture, while the extension and counter-extension is effected by simply flexing the forearm at right angles with the arm, and maintaining it in this position—thus effecting all the required conditions for a perfect apposition. The instrument is made by taking two pieces of thin board, one-quarter inch thick, fastened at the bend of the elbow by a hinge two inches wide, the lower portion extending from the elbow to the ends of the fingers, or even two inches below; the short portion extending from the elbow to the shoulder, terminating in a crutch for counter-extension; or the same end can be attained by fastening the upper end of the splint to the arm by means of adhesive plaster, with the arm in an extended position. The lower end of the splint is fixed to the hand and fingers with adhesive plaster, the other to the arm by the same means, or to the axilla by a crutch. Now, flex the forearm upon the arm, and you will produce from one to two inches of extension, depending upon the diameter of the arm. This form of dressing is especially applicable to fracture of the ulna and dislocation of the humeral portion of the radius, fracture of the humerus through the olecranon and coronoid processes, and where the fragment is displaced with the ulna. The complication of displacement of the head of the radius, or even fracture of this bone, will not alter this mode of procedure.

In treatment of fractured clavicle through any portion of it, or in fracture of the coracoid process of the scapula, the common treatment has always been to draw the shoulders backwards, and thereby apply this principle to its fullest extent without any appliances of adjustive splints, and who ever failed to obtain union of the clavicle? The plan I have adopted with success, and particularly in children, is to overlap their clothes in the back and pin them firmly in that position. I have found a strong waistcoat closed in front answer a very good purpose for the adult, pinned or laced up behind, thereby effecting all the requisite ends without the annoyance of wearing all mechanical appliances made and applied *secundum artem.* In this way patients go about with all their clothes in position, as if nothing serious had happened. If a portion of the bone should become prominent, I am in the habit of using strips of adhesive plaster drawn tightly over the projecting fragment, and thereby keeping it in its proper place.

A Remarkable Surgical Case. (Med. and Surg. Rep., March 16, 1861.)

A Paris correspondent says that at a late meeting of the Academy of Medicine an extraordinary surgical case was related by M. Jobert de Lamballe, as having recently been treated by him at the Hotel Dieu, one of the public hospitals of Paris. During the war in the Crimea, a French soldier, serving in the trenches before Sebastopol, was struck by a Russian ball upon the *os frontis*, making a hole about the size of a franc piece. He fell immediately, and was taken to the hospital, where he remained for twenty-four hours in a condition of utter insensibility. A few days after, however, he returned to the trenches and finished the campaign, and came back to France at its conclusion. Since then, however, he has frequently found it necessary to go upon the sick list, complaining of pains in the head and vertigo—and there has been an almost continual suppuration around the fracture. Before his entering the Hotel Dieu, M. Jobert states that he suspected the presence of some foreign substance, and that upon sounding for it, he found the ball, and proposed to the patient to extract it, to which he willingly consented, and the ball was taken out, after having remained in his head twenty-nine months. The ball weighed twenty-five grammes (a little less than an ounce), and was found resting upon the *dura mater*, surrounded by a hard, blackened blood. It was flattened in some places, which gave reason to believe that it had made several *ricochets* before striking the soldier, which, of course, broke the force of it considerably. The operation has been a complete success. The patient is now in excellent general health, and no longer complains of the pains in the head, which have troubled him ever since he received the wound.

Case of Strangulated Inguinal Hernia, occurring unexpectedly in an old ruptured subject. By Thomas S. Duffy, M.D. (Atlanta Med. and Surg. Journal.)

Daniel Lane, a resident of Lincoln county, has been for many years past ruptured on the *left* side. On the 3d of last August he mounted his horse and had only proceeded a few yards when for *the first time* the bowel escaped through the *right* inguinal ring and became strangulated. The pain was so great he had to be carried into the house. On the night of the same day I was called on to visit him and arrived to his assistance at day-light next morning—distance twenty miles. The large size, and extreme tenseness of the tumor, gave little hope of its reduction. When the taxis had failed, his situation and chances were explained to him, and he expressed himself as anxious for the operation. This was at once performed, the country people who had crowded in giving ready assistance. The hernial coverings were thin. The sac contained some muddy yellow fluid, with about five inches of colon of a dark chocolate color. The stricture was narrow and the fibres of the tendon, when cut, flew apart with violence. The bowel could not be returned, on account of partial adhesion, till an additional portion was drawn out, when there was no further difficulty. The wound was now adjusted with sutures and compresses, which were kept moist with tepid water.

Two hours after the operation the pulse was full, with uneasy abdominal feelings. I bled him to the extent of a pint or more, and gave 10 grains of calomel with half a dram of tincture of opium.

At 4 o'clock P. M., he was resting comfortably. I left a mixture composed of morphine and compound spirit of ammonia—a tablespoonful to be given at one time, and repeated as often as necessary to relieve pain or restlessness. Half an ounce of castor oil to be given next morning.

On the 7th I visited him and dressed the wound. His bowels had acted. I repeated the anodyne mixture and left three 5-grain papers of calomel—one to be taken every night.

On the 13th I visited him again. The wound had sicatrized. The gums were slightly touched. I found an abscess in the integument—caused probably by the efforts at reduction—which on being lanced yielded laudable pus. From this time the patient rapidly recovered.

A Case of Dislocated Os Humerus, of Eleven Years and Ten and a Half Months, successfully reduced. By Wm. H. Hubbard, M.D. (Am. Med. Monthly.)

Mr. Edward Tunstall was born September 8th, 1787, at Reinford, England; was injured in September, 1848, on the Liverpool and Manchester Railroad, by falling on the platform of Hayton Station. Having for a long time been afflicted with rheumatism in the shoulder, no attention was given to his case, and without professional advice he remained in this state, and came to America in 1856, and on the 4th August, 1860, I was called to visit him, and prescribe for him, for an attack of *pneumonia*. During my investigations, I discovered that the shoulder-joint was dislocated upward and inward, under the clavicle, and upon inquiry found the particulars as above stated. I advised the old man to have it reduced, as his arm was almost useless; he had kept the shoulder-joint without motion, nearly the whole of this long time, by use of a sling; he finally consented, and on the 5th August I made the trial with Jarvis's Adjuster, and succeeded in reducing the bone to its natural position, to the joy of himself and friends, and to my great satisfaction. It is now nearly six months since the reduction. He has the use of his arm as well as ever, except he says it is not as strong as the other. His residence is with his son, in the village of Greenfield, near Flatbush, Kings county, N. Y.

PRACTICAL MEDICINE.

Description and use of the Laryngoscope. By W. Henry Church, M.D. (Am. Med. Times.)

Visual examination of the interior of the larynx is not by any means a novel conception. Robert Liston, in the fourth edition of his Practical Surgery, when upon the subject of inflammation, œdema, and ulceration about the epiglottis and entrance of the larynx, uses the following language: "The existence of this swelling may often be ascertained by a careful examination with the fingers; and a view of the parts may sometimes be obtained by means of a speculum—such a glass as is used by dentists, on a long stalk, previously dipped in hot water, introduced with its reflecting surface downwards, and carried well into the fauces." As this edition was published in 1846, his investigations must have been prior to that date With that simple instrument and a strong sunlight he could undoubtedly see those parts, and the only matter of surprise is that such a man as Liston, having reached this point, should have neglected to carry his investigations further. Another English physician, Garcia, in 1855, published a paper demonstrating his Observations on the Human Voice. In describing his method he says: "It consists in placing a little mirror fixed on a long handle suitably bent, in the throat of the patient experimented on, against the soft palate and uvula. The party ought to turn himself towards the sun, so that the luminous rays falling on the little mirror may be reflected on the larynx. If the observer experiments on himself, he ought, by means of a second mirror, to receive the rays of the sun and direct them on the mirror which is placed against the uvula." He used the small mirror attached to the end of a flexible handle, as we do, and when experimenting upon himself employed a second mirror to concentrate the rays of the sun; whereas, had he made use of it in examining the patient, he would, probably, have recognized the advantages of such an arrangement.

All these investigations were allowed to sink into oblivion until the summer of 1857, when M. Turck, physician in chief to the Vienna General Hospital, during his service made some experiments with the laryngoscope, and in the year 1858, published several papers upon the subject. In the winter of 1857 and 1858, Czermak, as he says himself, first began his laryngoscopical examinations, for the purpose of getting a clear understanding of the manner in which certain sounds were produced, called *gutturales veræ*, then to repeat and complete Garcia's physiological experiments. But he goes on to say that he very soon appreciated, on the employment of artificial light, all the advantages of the instrument which he has commenced to use.

So little confidence was placed in the instrument that when I first began the study many physicians pronounced it useless, or at all events very much overrated, and I must confess that my early efforts were fast impressing my mind with the same conviction, when one day I was enabled to recognize the epiglottis and some of the parts adjacent. This was something, but as yet I had discovered nothing that may not often be exposed to the eye unaided by instruments. Encouraged, I continued my investigations with renewed confidence, until one clear bright morning when I succeeded in getting a very accurate view of all the parts at the entrance of the trachea, and from that time have steadily improved in the management of the instrument, the patient, and the sun's rays.

Before taking up the use of the instrument, permit me to refer briefly to the anatomy about the throat. The larynx, to which our attention will be given, is situated at the forepart of the neck between the trachea and the tongue. It receives its supply of nerves principally from the pneumogastric (or par vagum), purely a nerve of sensation, from its origin, to the ganglion of the pneumogastric nerve. Immediately below this point it receives filaments from five motor nerves, the spinal accessory, facial, sublingual, and the anterior branches of the first and second cervical nerves. Among the most important branches are the two laryngeal nerves, the superior of which is the principal sensitive nerve of the larnyx ; its division, therefore, destroys sensibility in the mucous membrane, but paralyzes only one muscle, the crico-thyroid. The inferior laryngeal branch is given off, just after the pneumogastric has entered the cavity of the chest. It curves round the subclavian artery on the right side, and the arch of the aorta on the left, to ascend in the groove between the trachea and œsophagus. It enters the larynx between the cricoid and posterior edge of the thyroid cartilages, to be distributed to all the muscles of that organ, with one exception. Exclusively muscular, its division is followed by paralysis of all the muscles of the larynx, with the single exception of the crico-thyroid, which, as you are aware, is supplied from the inferior laryngeal nerve. The cartilages of the larynx are the thyroid, cricoid, two arytenoid, and the epiglottis. To these are attached the eight muscles of that organ. The five larger are the muscles of the chordæ vocales, the crico-thyroid, crico-arytenoideus posticus, crico-arytenoideus, lateralis, thyro-arytenoideus, and the arytenoideus. The crico-thyroid and arytenoid muscles are contractors of the rima glottidis; the crico-arytenoidei postici and laterales being dilators of the same part. I hold in my hand a drawing which represents a tongue, larynx, and part of the trachea. The larynx and trachea have been laid open by a longitudinal incision along their posterior walls, the edges of the incised parts being separated, so as to expose the internal structures. Beginning at the epiglottis above, we follow its posterior surface until we reach the cavity or the larynx, where may be seen represented the superior or false vocal chords, immediately below this point the ventricle of the larynx, and then we reach the chordæ vocales proper, and rima glottidis.

From the point where the mirror is introduced into the posterior part of the pharynx to the upper edge of the epiglottis is quite one inch—from the latter point to the vocal chord is one inch and a half more, and I feel confident that I have seen and recognized the rings of the trachea three inches beyond the rima glottidis—in all a distance of five inches and a half, which must be nearly, if not quite, down to a point opposite the upper border of the sternum. At all events, is not this far enough for all practical purposes?

We will now take up the use of the laryngoscope. In Czermak's original instrument the reflector is so constructed that it may be supported between the teeth, and here is the little mirror that reveals to the eye parts in our economy that never have been seen, before its use, in the human subject whilst living. If the sunlight is to be used, you place the patient with his or her back towards that luminary, then seat yourself opposite, so that the face may be brought within a foot of the patient's. Being thus arranged you are prepared to begin the operation. Placing the handle of the reflector between your teeth, so fix the head as to concentrate the rays of the sun, and throw them into the posterior part of the throat, as boys with the sun-glass concentrate them on one point to create heat. I have frequently been obliged to desist for a few moments, owing to the intense heat which it caused in the posterior part of the pharynx. This first manipulation is important, and requires practice, in order that you may secure the full intensity of the light. Having placed the mirror in hot water, wipe it next with the left hand, introduce a spatula and depress the tongue gently but firmly, and then with the right hand you introduce the mirror behind, to the side, or in front of the palate, just as you find it most convenient to bring into view the parts that you wish to see. The first modification of the mirror that I noticed was supporting it upon a frame similar to those used for spectacles; and Tiemann & Co., of this city have arranged another. They have attached a handle to the reflector by means of the ball-and-socket joint, and to this handle is fastened an elastic band which will encircle the head, and support the reflector in front of the eye, enabling you to place it as you find most advantageous. While using the instrument to make local applications, I found that giving the spatula to an assistant to depress the tongue caused much embarrassment. It occurred to me that a spatula might be so arranged as to fasten upon the lower jaw and retain itself in situ, at the same time depressing the tongue. I described my wishes to Mr. Stuhlmann, of the firm of Tiemann & Co., who furnished me with such an instrument. A piece of hard rubber or metal is shaped like the lower jaw, from which an arm with a hinge joint runs up to the level of the teeth; to this is attached a spatula. After introducing the spatula into he mouth, you turn this screw, which depresses it, forcing the tongue downwards and forwards; with this the mouth may be opened and shut without the slightest inconvenience or displacement of the instrument.

You can readily imagine that it requires patience and practice to use an instrument where you are obliged, at the same moment, to manage the rays of the sun, two reflectors, your own head, eyes, and hands, as well as the patient's head and throat—but that it can be done I believe. There must be medical gentlemen here present who will testify to having seen the vocal chords and rima glottidis in more than one patient. In these patients I distinctly saw the two arytenoid cartilages as they came together in articulation, and at the same moment the vocal chords could be seen as they were approximated and separated in pronouncing *eh* and *ah*. In one I also discovered a small point of ulceration on the inner surface of the right arytenoid cartilage, and in this plate are represented the same parts as they appeared after recovery. That it is not an imagination of my own is apparent from my asking Dr. John W. Greene, one of the attending physicians of Bellevue Hospital why he represented that slight depression in his drawing? He answered that it was as he saw it, and then I remembered that there was the point of ulceration.

At the next examination those parts appeared healthy. The following condition of other parts in the throat could be easily recognized; the patient at the time suffering from constitutional syphilis, the epiglottis was contracted, thickened, and ulceration had appeared upon its edges, with all the tissues of the larynx and adjacent parts of the pharynx assuming the characteristic appearance of the disease.

Dr. Dalton in his Human Physiology, says that "The general sensibility of the œsophagus is very slight, as compared with that of the integuments, or even of the mucous membrane near the exterior." I have been surprised to find how little irritation the introduction of the mirror causes. There is no necessity for irritating the throat, or giving pain to the patient. Do not hurry, do not be rough; if the throat resists wait patiently until it gets confidence and find that you mean no harm, when it will be quiet and patient. The first advantage to be derived from the use of the instrument is the power to bring the diseased parts of the throat directly before the eye, enabling us to determine with certainty their location and extent. The second, and almost as important, is the ability to satisfy ourselves that the disease has not attacked certain parts, where heretofore, I doubt not, we have often employed local treatment when actually no disease did exist. Thirdly, to ascertain that all the parts about the larynx are restored to a healthy condition, more important to public speakers and singers, enabling them to determine when they may with safety return to their usual avocations; and fourthly, the advantage of seeing the parts to which we make local applications must be too apparent to the mind of every member of our profession to require comment. Almost the first patient that I treated was a girl about sixteen years of age, who for the last three winters had suffered with soreness of the throat, during the whole winter up to the warm weather of May, before she would get relief—each winter for from three to four weeks, she lost her voice. This winter the aphonia again returned, during the existence of which I made the first examination of her throat, and found all the parts at the base of the tongue in a hyperæmic condition, red, and very much swollen with inflammation and œdema of the aryteno-epiglottidean folds of mucous membrane; which inflammation extended to, and involved the superior vocal chords; the bright and shining apperance of the true vocal chords was lost, and they appeared as if enveloped in a cloud of haze. Having saturated a large pencil of camel's hair with a solution of tannin in glycerine, I passed it over the epiglottis and held it for a moment upon the entrance of the glottis, thence sweeping it all about the base of the tongue. The next day she expressed herself as being very much relieved, and could speak loud enough to be heard across a large room. Three days latter, the swelling at base of the tonge subsided, inflammation in the larynx diminished, and the surface of the trachea beyond the vocal chords was covered with healthy pus. Tinct. of iodine applied to the same parts, in the same manner as the previous application. Next morning the voice was perfectly restored, and the throat more comfortable than it had been for a long time. Twelve days after the last examination, although the patient did not complain of the throat, there was still inflammation at the base of the tongue, and along the aryteno-epiglottidean folds of mucous membrane. Having saturated the smallest camel's hair pencil with a solution of nit. of silver, I for the first time introduced it, guided by the laryngoscope, when I could distinctly see the pencil as it passed along the base of the tongue, between it and the epiglottis, thence along the mucous membrane from the epiglottis to the arytenoid cartilage leaving a white mark in its track.

That patient is now perfectly well.

Another lady, twenty years since, while tending her children, sick with scatlet fener, contracted a severe inflammation of the throat, which has coutinued to trouble her more or less since that time. Although robust and appatently healthy, her vital energies are evidently below par, suffering from nervousness, depression, loss of energy, sleeplessness, loss of appetite, and a tired feeling at the front part of the throat, in the region of the os hyoides. Looking into the throat, the pharynx, as far as it can be seen, appears perfectly healthy. Upon using the laryngoscope, the follicles at the base of the tongue can be seen enlarged, and all the glands of the same part are hypertrophied, evidently the result of long standing inflammation; the extremity of the epiglottis curved towards the base of the tongue, having the appearance of being so deformed by contraction of the frenum. The larynx appeared perfectly healthy. Applied the tannin and glycerine to the diseased parts. At the next visit the patient said she had slept better, felt better, and for the first time in some years had moisture upon her surface, which heretofore had been uncomfortably dry and parched. This patient is still improving, although not yet well.

I will refer to a few points in the history of two or three other patients, which may possess some interest. In a person suffering from phthisis pulmonalis, with ulceration upon the left vocal chord, I passed the long curved point of a syringe down until it could be seen at the entrance of the larynx, then injected into the glottis about ten drops of a five-grain solution of nitrate of silver, which excited the same irritation that the entrance of any fluid into the air-passage causes; this was soon relieved, and the patient says he has suffered less pain in swallowing, and is much more comfortable. At the next examination, the ulceration upon the vocal chord had disappeared.

In another case of consumption, with aphonia, I found a vegetation the size of a pea at the base of the epiglottis, between two folds of the arytenoid membrane. Nothing more was found that could account for the loss of voice.

When we can discover any method by which disease may be brought under the immediate supervision of the eye, we accomplish just so much towards bringing our profession to an exact science; and here is a new field opened to our view through the laryngoscope, made practical by Prof. Czermak, now of Prague, in Bohemia; yet, so far as I can learn, it is not purely an invention of his own, but like almost all useful mechanical improvements, must drag through a stage of probation until at last taken up by the man created for it, who carries it suddenly to perfection—so suddenly, that half the world looks on with incredulity, whilst the other half waits patiently for results. Although the instrument is not yet perfect, in all our improvements we can but play the part of satellites to make more brilliant the brightness of his star: he has passed through the trials and tribulations successfully—let him reap the just reward.

Sulphuric Ether as an Anæsthetic. (Boston Med. and Surg. Jour., March 7.)

At a recent meeting of the Boston Society for Medical Improvement, a discussion arose as to the immunity from death attending the inhalation of sulphuric ether, based upon several reported fatal cases following its use. It will be seen by the circular which we publish this week, that a committee was subsequently appointed to investigate the subject and report at a future meeting. The committee is composed of gentlemen admirably qualified for the task imposed upon them, and the result of their labors cannot fail to throw much light upon a question which has not been hitherto wholly decided. A case not without interest as bearing on this point, was sent to us a day or two since by

Prof. W. H. Mussey, of Cincinnati, an abstract of which will be found below; from this it appears that while a majority of the physicians present regarded death due to other causes, there were those who took the opposite ground.

We would particularly request medical and other journals throughout the country to copy the circular of the committee, that they in this way may more readily gain access to the facts upon which their conclusions must necessarily be based.

"BOSTON, MASSACHUSETTS, U. S.

"The question of the entire immunity from danger which is claimed for anæsthesia produced by ether, being still under discussion, the Boston Society for Medical Improvement has appointed the undersigned a committee 'to investigate the alleged deaths from the inhalation of sulphuric ether, and to report thereon.'

"They would therfore request the medical profession, or any person into whose hands this may fall, to communicate to either of them such cases, coming within their own observation, as shall serve to this end; giving the place, time and circumstances of their occurrence, with the mode of inhalation adopted, and, especially, information in regard to the following points:

1st. *The kind of ether used, whether pure sulphuric ether, chloric ether, or ether combined with chloroform.*

2d. *The period after inhalation at which death occurred;*
also any other facts which may enable them to form an opinion on the subject of their investigations.

"RICHARD M. HODGES, M.D.
"GEORGE HAYWARD, M.D.
"SOLOMON D. TOWNSEND, M.D.
"CHARLES T. JACKSON, M.D.
"*February*, 1861. J. BAXTER UPHAM, M.D."

The case of death following the inhalation of sulphuric ether, by Prof. Mussey, was recently reported to the Cincinnati Academy of Medicine. The patient, who had been more or less intemperate, was overturned in a buggy, fracturing the os innominatum. In order to proceed with the investigation of the injury without causing suffering, it was proposed to administer pure washed sulphuric ether, as the unanimous opinion was that chloroform would not do for this patient.

The patient was lying on his back, with his head low, slightly raised above the level of the back; his feet touching the rounds at the foot of the bed, and heels resting on the bed; the left limb moving at will, the right held down by one of the family; the right limb shorter by an inch and a quarter, and the foot slightly everted.

I examined the heart, says Dr. M., and noticed a perfect regularity in its action, of moderate force, with indistinctness of sounds, which I attributed to the distance from the ear, on account of the superimposed adipose tissue. The pulse was soft, of moderate force and fulness, and, by estimation, 75 to the minute.

The ether acted kindly, and was breathed easily; it stimulated the pulse to increased force and fulness, with at first a considerable increase in the frequency, which subsided, however, in a few minutes, to the original point.

In the course of ten minutes the patient raised up, attempted vomiting, and succeeded in throwing off about two ounces of fluid; five or six minutes later, he again raised on the left arm and vomited about one pint of dark-colored watery fluid; no blood or food was mixed with it. On lying down, the pulse was more feeble, and a profuse perspiration was noticed upon the body. Dr. J. Vanharlingen says he noticed the perspiration before the vomiting.

Dr. Robert Vanharlingen noticed during the effort of vomiting that the patient moved and flexed, with apparent ease, the affected limb. On lying down, the patient was apparently relieved, and as the pulse became fuller, the administration of ether was resumed, and the fulness and force of the pulse was maintained till within ten minutes from the time of vomiting, when the patient was in a condition to admit of manipulation with the limb.

I took hold of it and flexed the leg upon the thigh, and the thigh upon the pelvis, and rotated the limb till I was convinced there was no dislocation or solution of continuity of the thigh-bone; but twice I perceived a distinct rubbing sound like crepitation. Dr. J. Vanharlingen also noticed this peculiarity.

At the time of seizing the limb for examination there was a peculiar shortness of breath, of an asthmatic character, and Dr. J. Vanharlingen remarked that he was subject to attacks of asthma. On noticing this peculiarity, the use of ether was suspended, and not resumed; but the manipulation was proceeded with—the patient screaming out and writhing with pain, and apparently perfectly conscious. Seeing that his lips were purplish, and his breathing still very short, I proceeded to administer for his relief; he called for water—a little was given him, and a little vinegar was put in it, when some whiskey was procured and administered in warm water; but little, however, was taken. The patient complained that he was suffocating, and the tongue was drawn out, though there was no lack of control of it, as he put it out to take the stimulants. He was rolled upon the side; water was thrown in his face—first cold, then hot water applied to the forehead. The Marshall Hall method of artificial respiration, and the additional one of inflating the lungs from my own lungs with forced expulsion of air, and flagellation of buttocks, were continued fifteen or twenty minutes, when the patient was abandoned as dead.

The ether was from the manufactory of Powers & Weightman, Philadelphia. By measurement four ounces of ether was used. I administered it myself upon a handkerchief, placed in a towel, folded funnel shaped, and there was a large admixture of air. I watched the breathing, and frequently noticed the pulse, though the Drs. Vanharlingen each had a wrist in hand.

The patient had eaten a little bread and tea during the forenoon, which was all he had taken since the breakfast of Thursday.

The *post-mortem* examination revealed much fat about the abdominal viscera; the right kidney was of unusual size, two thirds larger than natural, highly engorged with blood, and in good condition; the left kidney wanting, or in its position the fat inclosed a single membrane of a dark-brown color, and the thickness of coarse paper, of about three square inches in extent. Liver enlarged, smooth, of a light color, slightly engorged, and of softened texture, breaking down easily between the fingers. Beneath the pelvic fascia there was a large deposit of venous clot, extending on the right side under poupart's ligament into the femoral canal, it being impossible to ascertain its source.

There was a large adipose deposite upon and around the pericardium, and one ounce of serum within its cavity. Fatty deposits upon the auricles of the heart, but no structural disease, other than an absence of the usual redness and firmness of the tissue; blood in the right auricle; ventricles empty; lungs distended with air, and engorged with blood; there were no pleuritic adhesions or anything unusual in structure. There was no examination of the brain. The blood throughout the body was very dark colored.

In view of the case, I did not hesitate to say to the family, that there were internal injuries sufficient to have destroyed the patient's life in a short time, but that the administration of ether had apparently hastened the result, though I was of the opinion that the manipulation with the limb *without ether*, might have been attended with like consequences, on account of the extreme irritability of the nervous system—amounting almost to tetanus—and the feeble powers of resistance, for which the constitutional peculiarities of the patient were accountable. This expression was fully concurred in by the physicians present.

Rupture of the Uterus and Death from Hemorrage in the sixth month of Pregnancy. By Dr. Corse. (Amer. Jour. of Med. Science, Jan., 1861.

Dr. Corse, at a meeting of the College of Physicians of Philadelphia, gave the following sketch of a case of this formidable accident. The comparative rarity of its occurrence during gestation is well known:

I was called to see Mrs. B., æt. 28, about the middle of the day, in consequence of incessant vomiting, and cramps in the abdomen, with great pain.

The patient was sitting in a chair near on open window, the weather being very warm. Her pulse was frequent and feeble, her tongue furred, and the surface of her body pale and covered with perspiration. She had occasionally indulged in the excessive use of alcoholic drink, and on this day had undertaken a promenade through the streets while under its influence, but was unable to accomplish it, and had a carriage called to take her home; soon after which the vomiting and cramps began. I was informed that she was near six months gone in pregnancy.

I prescribed remedies appropriate to the gastric irritation of the inebriate, and left her. The vomiting soon almost ceased, and the cramps diminished in frequency but rather increased in violence.

About seven o'clock in the evening I received a message to come in haste to her, and found her sitting in a chair, reclining in the arms of a female friend, in a state of insensibility, with her feet in a warm mustard bath, while another female friend was rubbing her legs. They supposed she had just fainted; we immediately laid her upon the side of the bed, and soon found life to be entirely extinct.

The corpse was placed in ice; and, after much persuasion, I obtained the privilege of making an autopsy.

On opening the abdomen, which was performed in the manner for delivery of a living child by gastronomy, the whole anterior part was found covered by a thick clot of blood extending from one lumbar region to the other. Upon removing this I discovered the source of the hemorrhage in a rupture of the fundus of the uterus. The rupture was not a complete opening of two edges as if from ramollissement or other disease, but a separation of the uterine structure, tearing the ruptured margins into fibrous fringes. Section across the rupture transversely, through the substance of the uterus, did not show any disease whatever, and we are left to conjecture in regard to the predisposing cause. The direction of the rupture was transverse, its length about two inches, and the location in the posterior slope of the fundus, not low enough down to come in contact with the spinal column.

The implantation of the placenta was left lateral, the edge extending across the front; the funis was central.

The location of the lesion does not admit of the supposition that it arose from mechanical injury applied from without directly to that part of the body, nor from pressure against the sides of the vertebræ; and, in the absence of any known liability, I have been led to surmise that it was due to some injury in one of her former pregnancies, this being the third. Of this her friends have no knowledge.

The true etiology of the accident admits of some difference of opinion. Some suppose violent contractions of the organ itself, set up by the disorder of the general nervious system from drink, as the exciting cause; others attribute the injury to the violent contractions of the abdominal muscles pressing upon the uterus during spasm; others think it due to the violent straining to vomit, while I suspect a fall upon her abdomen some time during the afternoon, after I left, to have been the immediate source of the disaster.

A new test for Diabetis. By E. C. Bidwell, M.D. (Southern Med. and Surg. Journal.)

The only test for glucoscuria which I have hitherto found satisfactory —fermentation—involves a delay which is often exceedingly annoying, and sometimes fatal to a satisfactory and seasonable diagnosis. Those founded upon the reduction of metalic oxides, besides being complicated and inconvenient for clinical use, are liable to various fallacies. A better test than any I have seen described, seems to me a desideratum —one which should be delicate and conclusive, and at the same time ready and convenient. Moved by this sense of a want, to experiment for a new process, I have discovered one which seems to meet fully the needs of the case; one which, if it be not pre-eminently scientific, is nevertheless facile and reliable. For the benefit of any others who may have felt the same want, I herewith communicate the result of my investigations.

Technically described, it is simply the conversion of the saccharine element of diabetic urine into *caramel* by heat. My mode is this: Upon a clean slip of tinned iron, place one or two drops of the suspected material, and hold it over a spirit lamp; the fluid will speedily evaporate, leaving, if the process be arrested at that point, scarcely a trace upon the metalic surface. Continue the application of heat; in a few moments after the desication is complete, a spot of an inch or so in diameter, over which the drop had spread with the first ebulition, will gradually assume a rich reddish-brown color, with a brilliant lustre, as if coated with a film of varnish or Japan lacquer. A strong heat produces a darker color, but the lustre continues till the heat becomes sufficiently intense to decompose the substances.

This experiment has succeeded perfectly in my hands, when the urine on trial, previously known to contain glucose, was of specific gravity less than 1030, and still further reduced by the addition of three or four times as much of water. It is thus proved to be a delicate test. I suppose it to be conclusive, also, for I have never yet found any other constituent of urine, normal or abnormal, capable of producing anything at all like the same appearance under the same treatment. The nearest approach is this; some samples of urine not diabetic, when treated in this way, leave a faint, dull, yellowish stain, easily distinguished from caramel by its paler color, and the entire absence of lustre. I need scarce add, that a solution of sugar, not diabetic, exhibits almost exactly the same reaction.

With the augmented interest attached to glucosuria, since, besides being a leading feature of a most intractable, but fortunately rare, disease, it is found symptomatically associated with several other diseases and injuries, an increased facility for its detection is almost a necessity of the profession. I trust they will find it in the simple and beautiful experiment above described.

Whooping Cough.—Dr. Benson, of the Louisville *Journal*, recommends the following:

℞—Acid Hynrocyan,	gtt vi.
Ext. Belladonna,	grs. ii.
Tinct. Opii. Camph.,	ʒ iii.
Syr. Bals. Tolu,	℥ ii.
Aquæ Font,	℥ iii.

Misce. S. One teaspoonful four times a day.

Chilblain.—Dr. James E. Garrison, of Philadelphia, publishes in the *Reporter*, of the 19th January, the following formula for chilblain, which he has used with remarkable success:

℞—Ferri per sulph. (Mousel's solution),	say, f ʒ i.
Tinct. Iod., Lin Saponis, } aa	say, f ℥ i.

The quantity of each article to be directed of course, by the indications of each particular case. Before applying the liniment, which may be painted with a brush, or applied by wrapping up the toes with saturated raw cotton, the feet are to be held two or three minutes in cold water, and next rubbed into a glow with a crash towel.

MISCELLANEOUS.

The issue of the present number has been unavoidably delayed, in consequence of the pressure of circumstances arising from the disturbed state of our beloved country. The editor, in the discharge of his duties as Surgeon in one of the Regiments of the Ohio Volunteers, will be absent from his home for an indefinite period, and it is impossible at this moment of writing, to say what arrangements will be consummated for the issue of the next number. Our readers who have been so kind in their recognition of the previous numbers of the Review, will feel with us, in the uncertainty as to the future with which we send forth this number. At a time when our whole country is about to undergo the greatest trial of her strength she has ever experienced, minor interests must necessarily be affected and postponed. The means and the energy of our fellow citizens will be poured forth for her good, and every thing else must stand aside until she comes forth (as come forth she will) from the contest, glorious in her strength. The patriotism of our fellow practitioners of medicine and surgery, will be no less than that of any other class of the community. If therefore our cherished Review must be suspended for a time, we shall bow with pleasure, offering the sacrifice, small as it may seem, as our mite for the good of our common country, while for her our prayers will ever ascend *esto perpetua.*

WHEN Hannibal was engaged in his seige of Rome, the citizens, to show their sense of security against his assaults, and their contempt of his vain efforts, bought and sold the ground upon which his army was encamped, at or even above its previous rates in the market. So it is now with regard to the little grounds of truth upon which the many false systems of medical doctrine, which attempt the hopeless task of overturning legitimate medicine, are encamped. We shall not abandon those truths, but hold them in equally as high estimation as though they had never been defiled or dishonored by the footstep or grasp of any short-lived delusion, or evanescent cheat, clad in the attire of medicine. —*Chicago Med. Journal.*

THE committee from the Medical Society of Paris, appointed to investigate the subject of catheterism of the larynx in diptheria, report against it. One of the subjects upon whom it was practiced, died from the operation. M. Loisean had previously recommended it.

IT is said that all ointments used for the cure of psora, owe their curative properties entirely to the lard. If this be true, the combinations of sulphur, mercury, etc., which are so often objected to, may be dispensed with.

AMERICAN MEDICAL ASSOCIATION.—The fourteenth annual meeting of the American Medical Association will be held in Metropolitan Hall, city of Chicago, commencing on the *first* Tuesday in June next.

Each regularly organized Medical Society is entitled to send one delegate for every ten of its members; and each Medical College is entitled to two delegates. It is desired that the names of delegates should be forwarded to the undersigned, as soon after their appointment as practicable.

H. A. JOHNSON,
Assistant Secretary.

CHICAGO, Feb. 1st, 1861.

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